BOEING

Dimensions of Airline Growth
March 1980

Preface

This document outlines how the Boeing Commercial Airplane Company forecasts the long-term market for aircraft. It is divided, as the chart below suggests, into the following five sections.

SECTION 1 outlines historical economic growth for the U.S., Europe, and Japan and also provides the Boeing outlook for those areas. The purpose of this section is to provide an understanding of the long-range economic environment in which the airline industry is developing.

SECTION 2—new with this edition of Dimensions and with separate emphasis on energy, petroleum, and jet fuel—expands the analysis of economic conditions surrounding the growth of world airline traffic.

SECTIONS 3 AND 4 outline historical world airline passenger and cargo performance from 1960 through 1979 and extends the Boeing long-range forecast through 1995.

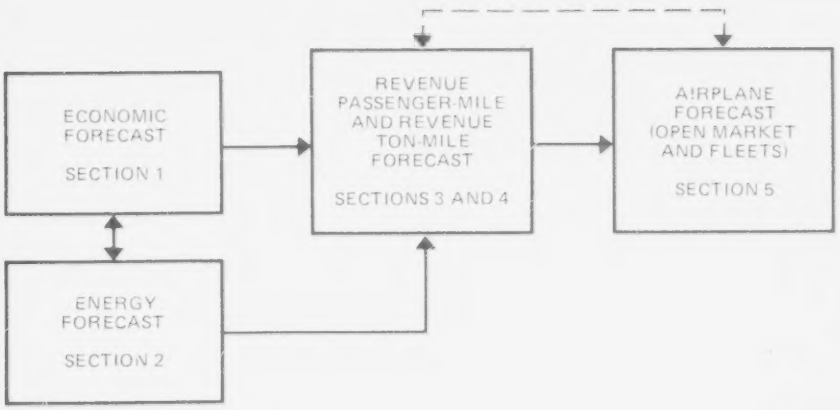
The data on scheduled services are based mainly on CAB and ICAO records. However, other official sources are used to describe worldwide charter services. The airline categories are self-explanatory. Definitions appear on page 52.

SECTION 5 presents the methodology Boeing uses to forecast airplane sales, open market, and fleets. It also provides historical and forecast data from 1955 through 1990.

Boeing's Market Research organization makes considerable effort to ensure the accuracy of historical data in this document. However, The Boeing Company has no independent means for verifying the accuracy of the source data and, therefore, in case of apparent discrepancies, we urge users to consult original source materials.

The Boeing Commercial Airplane Company welcomes questions or comments on the material presented.

Boeing Market Forecasting Process



The two most significant changes in the Boeing long-range forecasts concern the passenger traffic projections for the U.S. airlines and air cargo expectations industrywide.

U.S. domestic airline passenger traffic is expected to benefit more than was previously anticipated because of:

- An accelerating shift in the demographic composition of the U.S. population with significant growth occurring in the age and income categories most prone to travel.
- Changes in consumer purchasing patterns which increasingly favor spending on leisure activities and vacations.
- The continuing shift from use of automobiles to use of air services for intercity travel.

Air cargo forecasts were revised downwards because:

- Data base revisions and the extremely modest performance of the industry in 1979 have created a lower base for growth in the 1980s than had been forecasted.
- Lower projections for world economic growth, a higher level of uncertainty regarding inflation and currency exchange rates, and a subsequent increase in the possibility of protectionist measures have led to a downward revision of cargo growth rates especially in the earlier years of the forecast period.
- Rapidly rising fuel costs have severely impacted the profitability of freighter operations given the current composition of freighter fleets. This has led us to lower our near-term expectations for freighter service expansion and, given the expected increase in widebody lower hold capacity, to significantly lower our forecast of scheduled airlines' charter operations.

Macro Economic Outlook

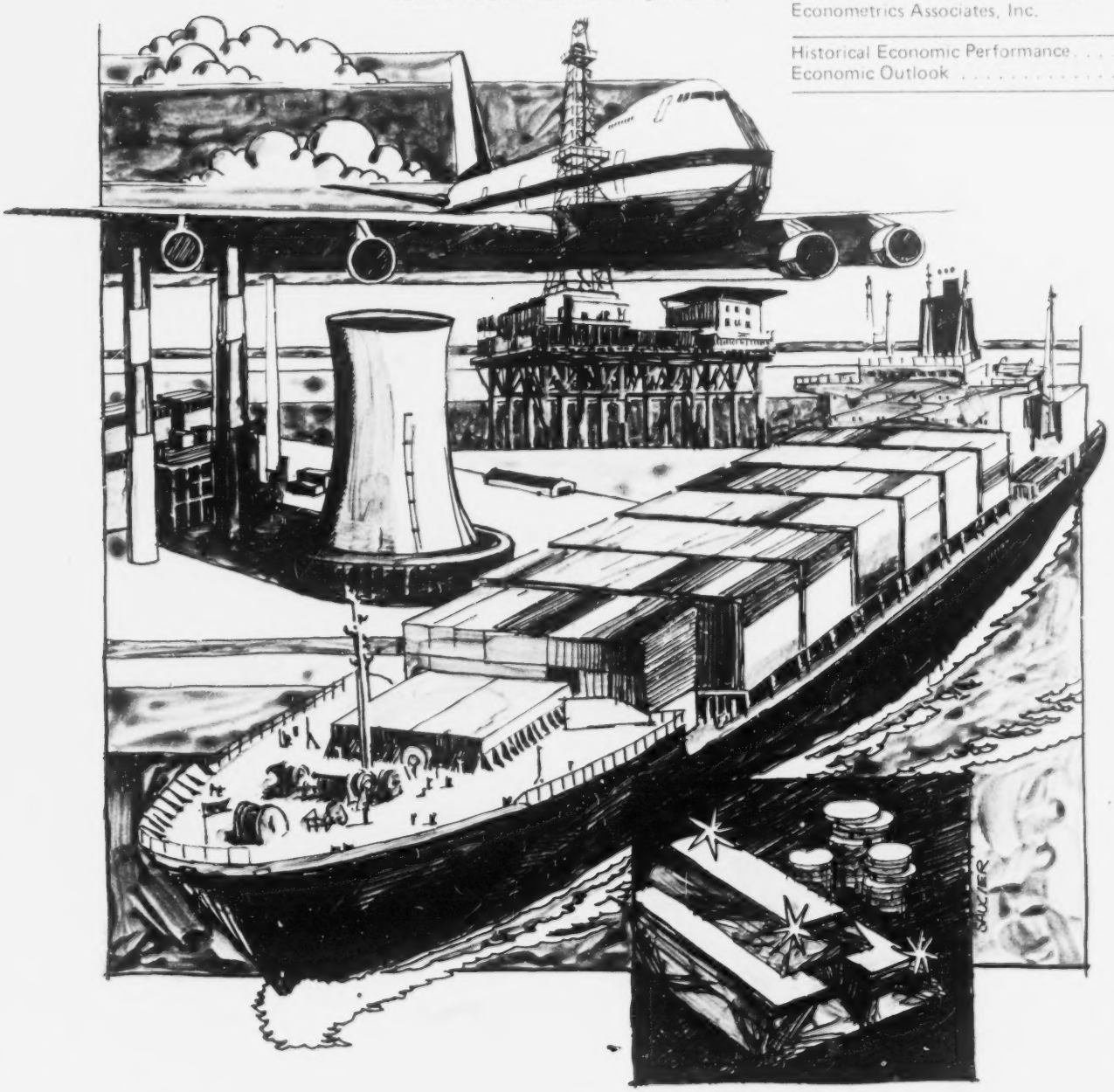
Section 1

The following information documents historical economic data for the U.S., Europe, and Japan for 1960-1979, and presents The Boeing Company's macro economic assumptions and forecasts for 1980-1990.

Throughout the economic forecast portion of this section, the terms "baseline" and "alternate forecast" are used. The baseline forecast assumes a "tight money" recession in the U.S. in the first half of 1980 that will have a moderating impact on growth in Western Europe and Japan. The alternate forecast assumes an overall higher rate of inflation which curbs real growth rates through the forecast period.

The historical source for all U.S. economic data is the U.S. Department of Commerce. The historical source of all data from Europe and Japan is Chase Econometrics Associates, Inc.

Historical Economic Performance 4
Economic Outlook 6



Macro Economic Outlook

Historical Economic Performance

	1960 GNP	1968 GNP	1969 GNP	PCT. GROWTH	1970 GNP	PCT. GROWTH	1971 GNP	PCT. GROWTH	1972 GNP	PCT. GROWTH	1973 GNP	PCT. GROWTH
UNITED STATES												
CURRENT $ GNP	506.0	868.5	935.6	7.7	982.4	5.0	1063.5	8.3	1171.1	10.1	1306.6	11.6
CONSTANT (1972 $) GNP	736.8	1051.8	1078.8	2.6	1075.3	-0.3	1107.4	3.0	1171.1	5.7	1235.0	5.5
GNP DEFLATOR	68.7	82.6	86.7	5.0	91.4	5.3	96.0	5.1	100.0	4.1	105.8	5.8
EUROPE*												
CURRENT $ GNP	276.0	501.0	555.0	10.8	626.0	12.8	699.0	11.7	777.0	11.2	912.0	17.4
CONSTANT (1972 $) GNP	467.0	634.0	674.0	6.3	715.0	6.1	748.0	4.6	777.0	4.2	824.0	6.0
GNP DEFLATOR	59.1	79.0	82.3	4.2	87.6	6.4	93.7	7.0	100.0	6.7	110.7	10.7
JAPAN												
CURRENT $ GNP	60.0	191.0	221.0	15.7	262.0	18.6	294.0	12.2	335.0	13.9	410.0	22.4
CONSTANT (1972 $) GNP	99.0	233.0	258.0	10.7	287.0	11.2	308.0	7.3	335.0	8.8	368.0	9.9
GNP DEFLATOR	60.6	82.0	85.7	4.5	91.3	6.6	95.5	4.6	100.0	4.8	111.4	11.4
COMPOSITE (U.S., EUROPE, JAPAN)												
CURRENT $ GNP	842.0	1560.5	1711.6	9.7	1870.4	9.3	2056.5	9.9	2283.1	11.0	2628.6	15.1
CONSTANT (1972 $) GNP	1302.8	1918.8	2010.8	4.8	2077.3	3.3	2161.5	4.1	2283.1	5.6	2427.0	6.3
GNP DEFLATOR	64.6	81.3	85.1	4.7	90.0	5.8	95.1	5.7	100.0	5.1	108.3	8.3

Definitions

Gross National Product (GNP)—The total market value of the output of all goods and services produced by a nation during a given period of time. May also be expressed as the sum of the current dollar values of all the components of aggregate demand in the economy. Aggregate demand is generally divided into four major categories:

- Personal consumption
- Investment
- Government purchases
- Net exports

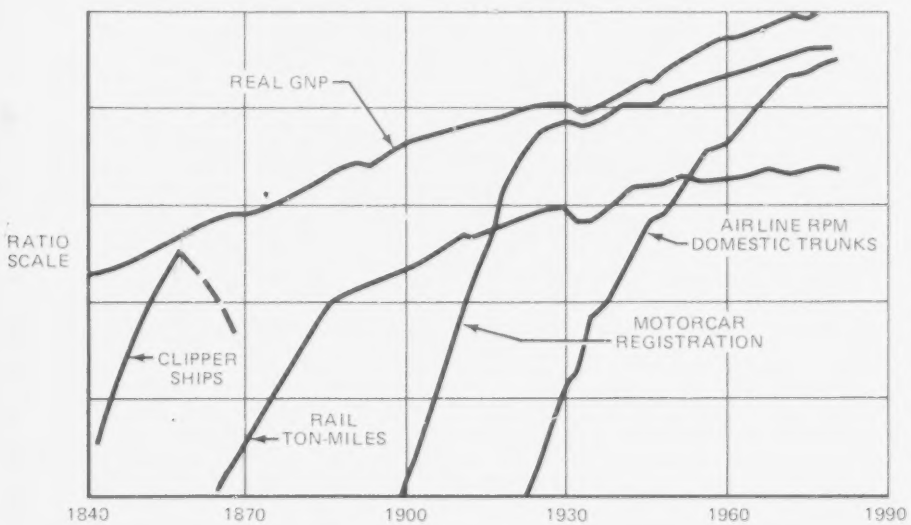
Gross National Product in Constant 1972 Dollars—The total output of goods and services valued in 1972 market prices. Changes in constant dollar GNP represent the real growth in the economy net of inflation.

Gross National Product Deflator—The index of general inflation (1972 = 100.0). Provides the broadest measure available of the rate of inflation in an economy.

1974 GNP	PCT. GROWTH	1975 GNP	PCT. GROWTH	1976 GNP	PCT. GROWTH	1977 GNP	PCT. GROWTH	1978 GNP	PCT. GROWTH	EST. 1979 GNP	PCT. GROWTH	
												UNITED STATES
1412.9	8.1	1528.8	8.2	1702.2	11.3	1899.5	11.6	2127.6	12.0	2368.6	11.3	CURRENT $ GNP
1217.	-1.4	1202.4	-1.3	1273.0	5.9	1340.5	5.3	1399.2	4.4	1431.2	2.3	CONSTANT (1972 $) GNP
116.0	9.7	127.1	9.6	133.7	5.2	141.7	6.0	152.1	7.3	165.5	8.8	GNP DEFLATOR
												EUROPE
1053.0	15.5	1173.0	11.4	1386.0	18.0	1503.0	12.5	1647.3	9.6	1830.1	11.1	CURRENT $ GNP
844.0	2.4	823.0	-2.5	858.0	4.3	879.0	2.4	902.7	2.7	929.8	3.0	CONSTANT (1972 $) GNP
124.8	12.7	142.5	14.2	155.7	9.2	171.0	9.8	182.5	6.7	196.8	7.9	GNP DEFLATOR
												JAPAN
489.0	19.3	540.0	10.4	611.0	13.1	684.0	11.9	749.7	9.6	821.6	9.6	CURRENT $ GNP
364.0	-1.1	373.0	2.5	395.4	6.0	419.0	6.0	443.3	5.8	468.1	5.6	CONSTANT (1972 $) GNP
134.3	20.6	144.8	7.8	154.5	6.7	163.2	5.6	169.1	3.6	175.5	3.8	GNP DEFLATOR
												COMPOSITE (U.S., EUROPE, JAPAN)
2954.9	12.4	3241.8	9.7	3649.2	12.6	4086.5	12.0	4524.6	10.7	5020.3	11.0	CURRENT $ GNP
2425.8	-0.0	2398.4	-1.1	2526.4	5.3	2638.5	4.4	2745.2	4.0	2829.1	3.1	CONSTANT (1972 $) GNP
121.8	12.5	135.2	11.0	144.4	6.9	154.9	7.2	164.8	6.4	177.5	7.7	GNP DEFLATOR

Growth and Maturity in the U.S. Economy

1840-1979



Sources: Historical Statistics of the U.S., Colonial Times to 1970
U.S. Dept. of Commerce

Studies of a wide cross section of new industries from birth to maturity reveal a common pattern—new industries are formed to exploit new technology. A long series of improvements typically follows which enhances the quality of supply and also cuts costs. This powerful compound stimulus to demand induces "explosive" growth rates. During this dynamic growth stage, new investments pour in, employment rises, and aggregate income rises both directly and via spread effects. Maturity occurs at the point of diminishing returns on new technology when better quality begins to cost more, not less. Higher costs then offset the stimulus of better quality, rather than compound it. Thereafter growth occurs at about the rate of the GNP, as the chart illustrates. If the rate of new industry formation continues at the slower than long-term average rate of growth established in the 1970s, future GNP will also grow more slowly than in the past.

Macro Economic Outlook

U.S. Outlook

- 1980 will see a recession in part a function of "tight, expensive money."
- Recovery will come toward the end of the year or early 1981.
- Further growth rates depend heavily on capital investment levels to replace obsolete plant and equipment.
- Baseline forecast assumes:
  - "Tight money" eases by mid-1980
  - No major wars, oil embargo, or other traumatic dislocations
  - Reasonably high levels of capital investment
  - Rising productivity, in part from investment, in part from demographic maturity of the labor force.

Outlook for Europe and Japan

- West European growth rates in 1979 are mixed, e.g., Italy is vigorous, U.K. is sluggish.
- Impact of U.S. recession plus OPEC price increases will cause a slowdown in Western Europe in the second half of 1980 with a recovery in 1981.
- External pressure to limit Japanese exports plus OPEC price increases will limit Japanese 1980 GNP to the 5% level.
- A general slowing in the population growth rate will result in a higher labor participation rate and strong growth in per capita income.

World Outlook

- The level of world trade will remain high but with moderator growth rates.
- Prices and demand for third world raw materials will remain fairly strong.
- Economic slowdown of industrial countries will have a restraining impact on overall world growth.
- World inflation will remain relatively high at about 8% over the next decade.
- These outlooks assume that no major prolonged disruptions to the international system will occur.

Area GNP Growth Rates

Percent

(1972 Constant Dollars)

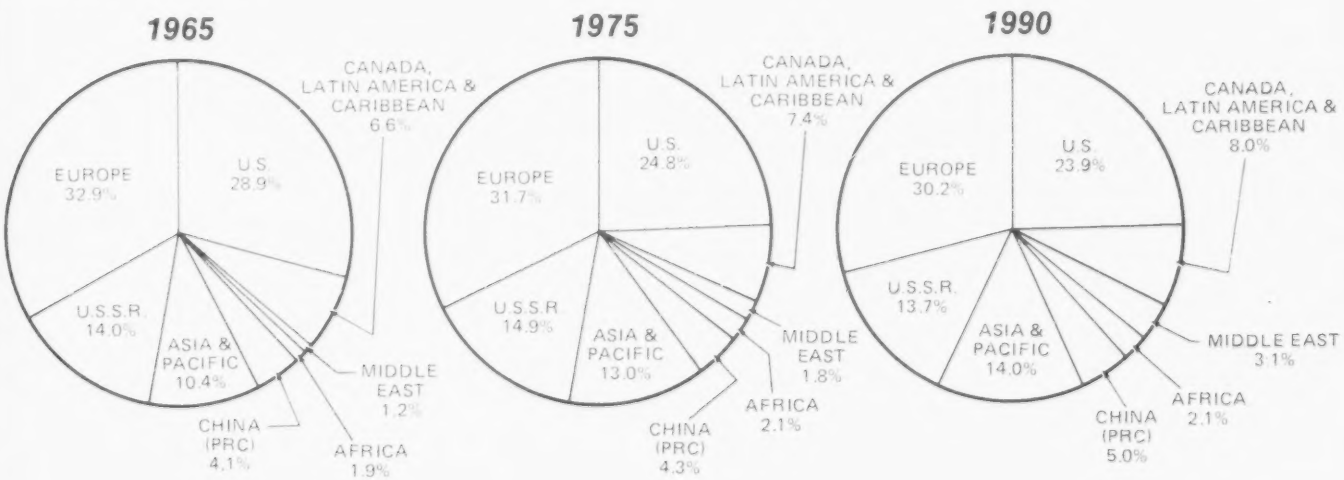
	WORLD	EUROPE*	U.S.	CANADA, LATIN AMERICA & CARIBBEAN	MIDDLE EAST	AFRICA	ASIA & PACIFIC	CHINA (PRC)	U.S.S.R.
HISTORICAL									
1966	5.9	4.2	6.0	5.0	5.6	4.6	7.6	8.2	6.2
1967	3.9	3.3	2.7	4.4	4.6	5.2	10.0	−2.2	6.3
1968	5.7	5.7	4.4	5.8	9.2	6.4	9.9	0.1	4.9
1969	5.4	6.3	2.6	6.3	8.6	8.5	10.1	10.6	3.1
1970	4.8	6.1	−0.3	5.9	7.4	6.7	8.2	14.0	7.2
1971	4.5	4.3	3.0	6.3	8.8	4.6	5.7	15.6	4.2
1972	5.0	4.2	5.7	6.2	11.9	5.5	7.1	0.0	2.5
1973	6.4	6.0	5.5	7.1	11.6	4.3	8.7	4.3	6.6
1974	1.4	2.4	−1.4	6.1	10.4	5.3	0.0	−7.0	3.4
1975	0.0	−2.5	−1.3	1.9	10.8	3.1	0.1	7.4	4.0
1976	4.8	4.3	5.9	4.5	10.5	4.3	4.8	5.0	3.6
1977	3.9	2.4	5.3	4.9	10.4	4.7	5.6	5.4	3.9
1978	3.9	2.7	4.4	4.7	10.3	4.6	5.5	5.5	3.9
PRELIMINARY									
1979	3.4	3.0	2.3	4.8	9.8	4.7	5.5	5.5	3.7
FORECAST (BASELINE)									
1979-90	3.9	3.4	3.1	5.0	9.0	4.2	5.0	5.8	3.5

*Excludes U.S.S.R.

Note: Weighted average total

World GNP Distribution

(1972 Constant Dollars)



Macro Economic Outlook

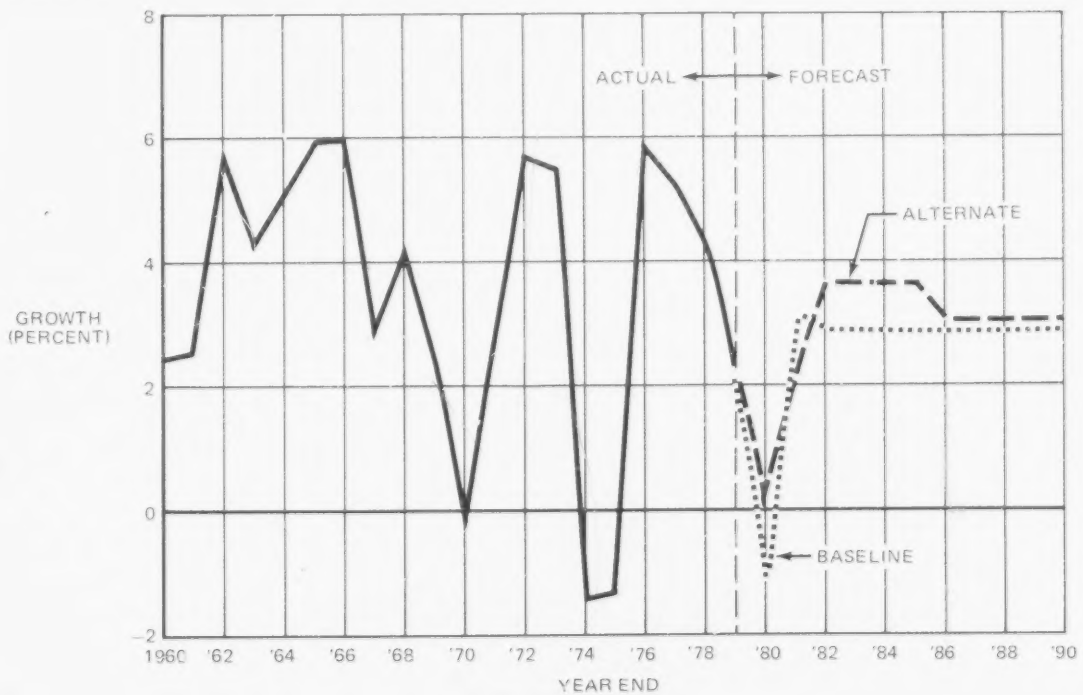
Boeing Economic Forecast—Baseline

(Billions of U.S. Dollars)

	1960	1965	1970	1975	EST. 1979	1980	AVG. % GROWTH 1979-80	1985	AVG. % GROWTH 1980-85	1990	AVG. % GROWTH 1985-90
UNITED STATES											
CURRENT $ GNP	506.0	688.1	982.4	1528.8	2368.6	2530.1	7.2	3939.0	9.2	5320.3	6.2
CONSTANT (1972 $) GNP	736.8	925.0	1075.3	1202.4	1431.2	1416.9	-1.0	1642.6	3.0	1904.2	3.0
GNP DEFLATOR	68.7	74.3	91.4	127.1	165.5	179.2	8.3	239.8	6.0	279.4	3.1
EUROPE*											
CURRENT $ GNP	276.0	424.0	624.0	1173.0	1830.1	2028.0	10.8	3380.0	10.8	5582.0	10.6
CONSTANT (1972 $) GNP	467.0	560.0	715.0	823.0	929.8	937.0	0.8	1072.0	2.7	1204.0	2.3
GNP DEFLATOR	59.1	76.1	87.6	142.5	196.8	216.4	10.0	315.3	7.8	463.6	8.0
JAPAN											
CURRENT $ GNP	60.0	116.0	262.0	540.0	821.6	902.0	9.8	1482.0	10.4	2418.0	10.3
CONSTANT (1972 $) GNP	84.0	163.0	282.0	373.0	468.1	489.0	4.5	613.0	4.6	749.0	4.1
GNP DEFLATOR	60.6	71.2	91.3	144.8	175.5	184.5	5.1	241.8	5.6	322.8	6.0
COMPOSITE (U.S., EUROPE, JAPAN)											
CURRENT $ GNP	842.0	1230.1	1870.4	3241.8	5020.3	5469.1	8.9	8801.0	10.0	13320.3	8.6
CONSTANT (1972 $) GNP	1302.8	1648.9	2077.3	2398.4	2829.1	2842.9	0.5	3327.6	3.2	3857.2	3.0
GNP DEFLATOR	64.6	74.6	90.0	135.2	177.5	192.4	8.4	264.5	6.6	345.3	5.5

Real GNP Growth for U.S.

(1972 Constant Dollars)



Boeing Economic Forecast—Alternate

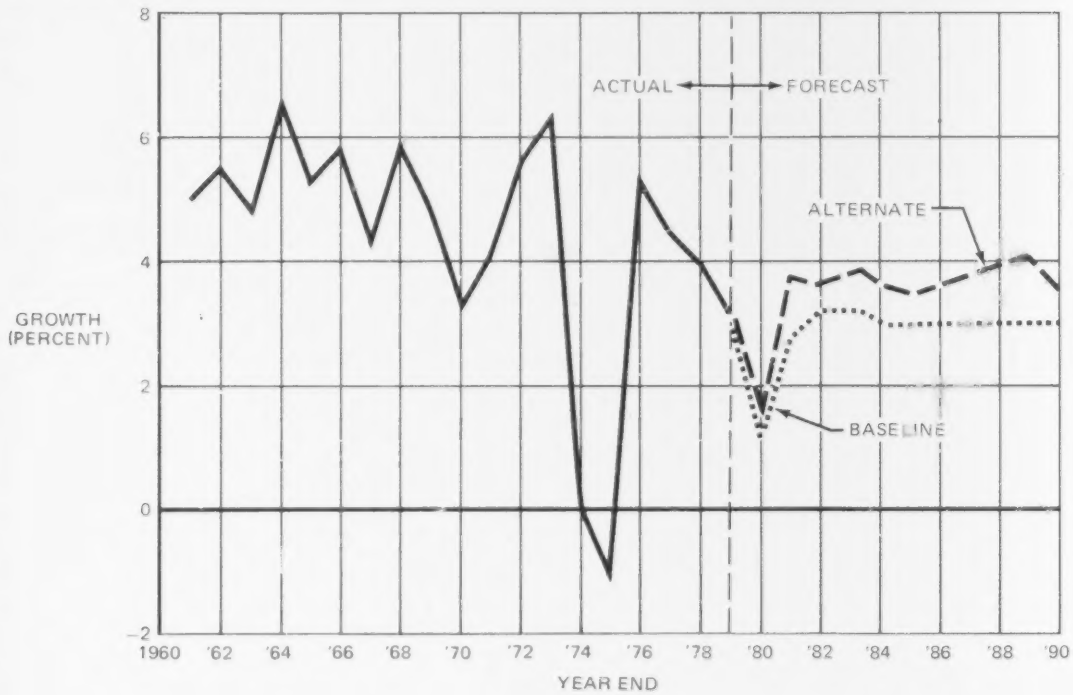
(Billions of U.S. Dollars)

1960	1965	1970	1975	EST. 1979	1980	AVG. % GROWTH 1979-80	1985	AVG. % GROWTH 1980-85	1990	AVG. % GROWTH 1985-90	
											UNITED STATES
506.0	688.1	982.4	1528.8	2368.6	2570.4	8.5	4121.8	9.9	5894.8	7.4	CURRENT $ GNP
736.8	925.9	1075.3	1202.4	1431.2	1431.2	0.0	1699.7	3.5	1978.8	3.1	CONSTANT (1972 $) GNP
68.7	74.3	91.4	127.1	165.5	179.6	8.5	242.5	6.2	297.9	4.2	GNP DEFLATOR
											EUROPE*
276.0	426.0	626.0	1173.0	1830.1	2028.0	10.8	3380.0	10.8	5582.0	10.6	CURRENT $ GNP
467.0	560.0	715.0	823.0	929.8	946.0	1.7	1131.0	3.6	1345.0	3.5	CONSTANT (1972 $) GNP
59.1	76.1	87.6	142.5	196.8	214.4	8.9	298.9	6.9	415.0	6.8	GNP DEFLATOR
											JAPAN
60.0	116.0	282.0	540.0	821.6	902.0	9.8	1482.0	10.4	2418.0	10.3	CURRENT $ GNP
96.0	163.0	287.0	373.0	468.1	490.0	4.7	635.0	5.3	820.0	5.2	CONSTANT (1972 $) GNP
60.6	71.2	91.3	144.9	175.5	184.1	4.9	233.4	4.9	294.9	4.8	GNP DEFLATOR
											COMPOSITE (U.S., EUROPE, JAPAN)
842.0	1230.1	1870.4	3241.8	5020.3	5500.4	9.6	8983.8	10.3	13894.8	9.1	CURRENT $ GNP
1302.8	1648.9	2077.3	2398.4	2829.1	2867.2	1.3	3465.7	3.9	4143.8	3.6	CONSTANT (1972 $) GNP
64.6	74.6	90.0	135.2	177.5	191.8	8.1	259.2	6.2	335.3	5.3	GNP DEFLATOR

*Europe, in this section, includes only the United Kingdom, France, Federal Republic of Germany, and Italy.

Real GNP Growth for U.S., Europe, and Japan

(1972 Constant Dollars)

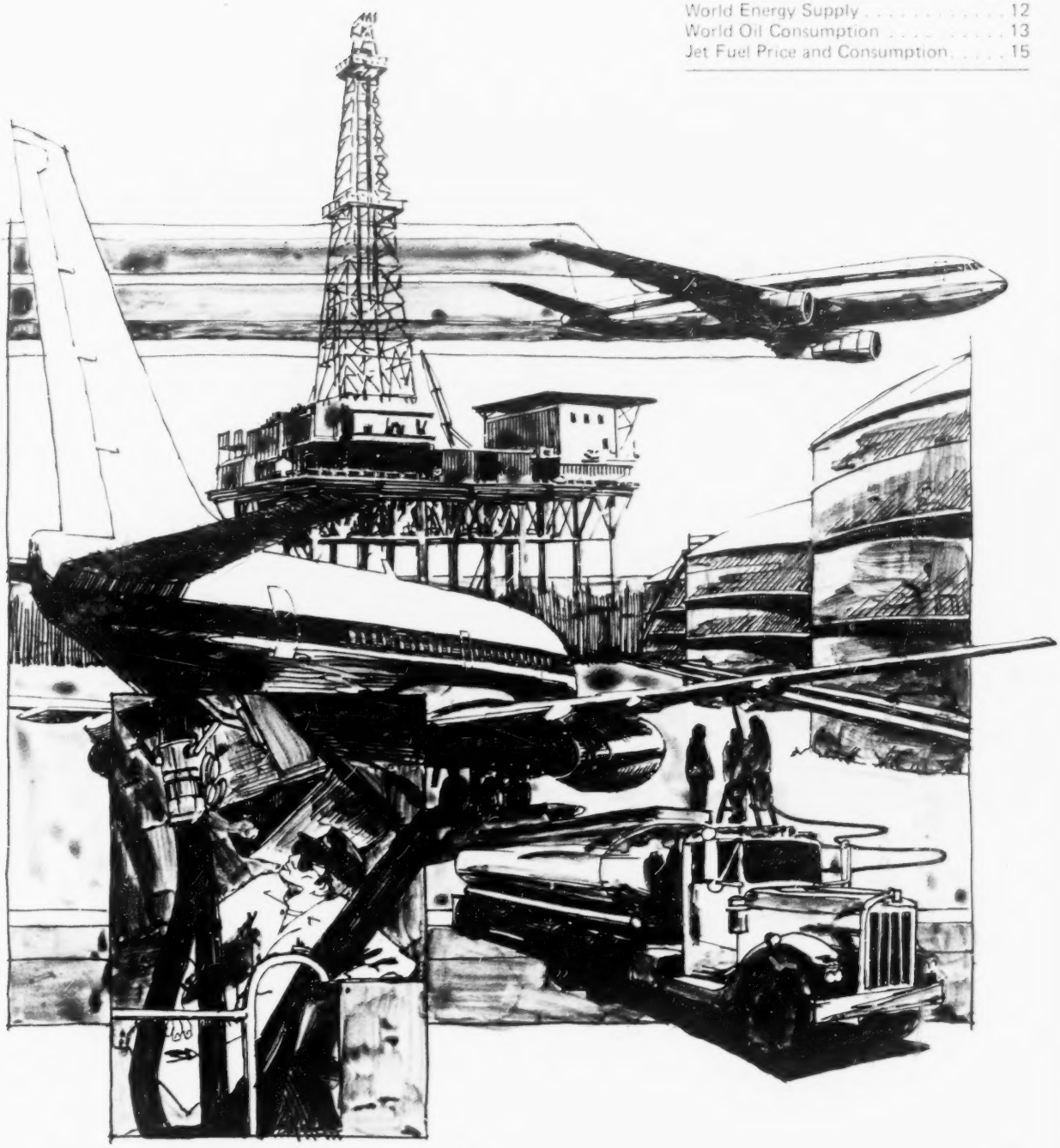


Fuel

Section 2

This section outlines the world supply and consumption of energy, particularly petroleum, and delineates the increasingly efficient utilization of jet fuel by commercial air carriers.

World Energy Supply 12
World Oil Consumption 13
Jet Fuel Price and Consumption 15

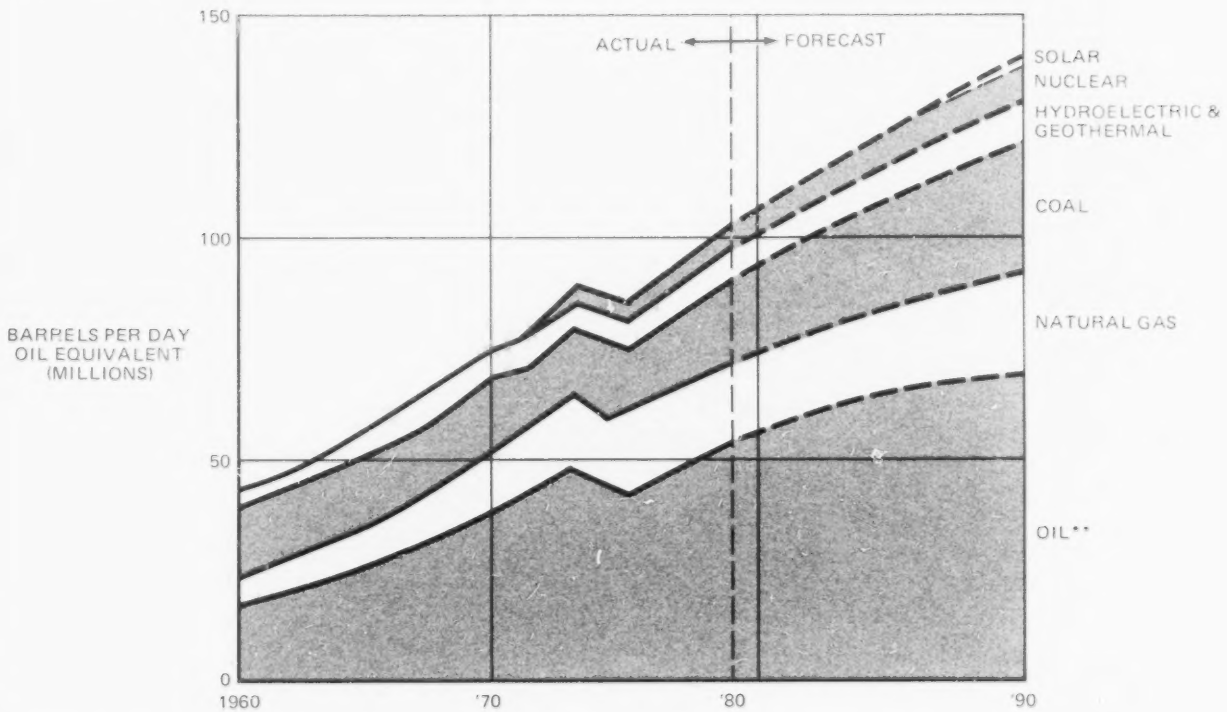


Fuel

World Energy Supply

Reflecting observed price elasticity of demand, current forecasts of overall energy requirements in 1990 range from the equivalent of 120 to 140 million barrels of oil per day—down from approximately 150 million barrels of oil equivalent per day just over a year ago. The case shown here assumes supply constrained only by normal market forces. Political instability in OPEC nations could result in much lower levels of oil supply.

World* Energy Supply



* Excludes U.S.S.R., P.R.C., and COMECON countries.
**Includes natural gas liquids, synthetic crudes, and net Sino-Soviet imports.
Sources: Chevron; BCAC

World Oil Consumption*

Millions of Barrels per Day

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978P	1985 HIGH	1985 LOW	1990 HIGH	1990 LOW
UNITED STATES	9.8	11.5	14.7	15.2	16.4	17.3	16.7	16.3	17.5	18.4	18.8	20.2	18.8	20.4	18.3
% CHANGE	–	3.2 AVG	5.0 AVG	3.5	7.9	5.5	-3.8	-2.0	7.3	5.3	2.1	1.0 AVG	0.0 AVG	AVG	-0.6 AVG
WESTERN EUROPE	3.9	7.5	12.4	12.9	13.9	14.5	13.7	12.6	13.5	13.8	14.6	17.4	16.0	18.9	16.0
% CHANGE	–	14.3 AVG	10.4 AVG	4.4	7.5	4.4	-5.6	-7.9	7.0	2.3	5.8	2.5 AVG	1.3 AVG	1.7 AVG	0.0 AVG
JAPAN	0.6	1.8	4.0	4.4	4.7	5.5	5.3	5.0	5.2	5.4	5.4	7.5	6.0	8.2	6.0
% CHANGE	–	24.6 AVG	17.7 AVG	10.9	6.7	15.3	-3.5	-4.8	3.4	3.1	1.3	4.7 AVG	1.5 AVG	1.8 AVG	0.0 AVG
TOTAL WORLD**	18.5	26.7	39.2	41.3	44.2	47.3	45.9	44.1	47.3	49.4	51.4	62.8	55.0	68.1	57.0
% CHANGE	–	7.6 AVG	8.0 AVG	5.4	7.0	6.9	-2.9	-3.8	7.1	4.4	4.2	2.9 AVG	1.0 AVG	1.6 AVG	0.7 AVG

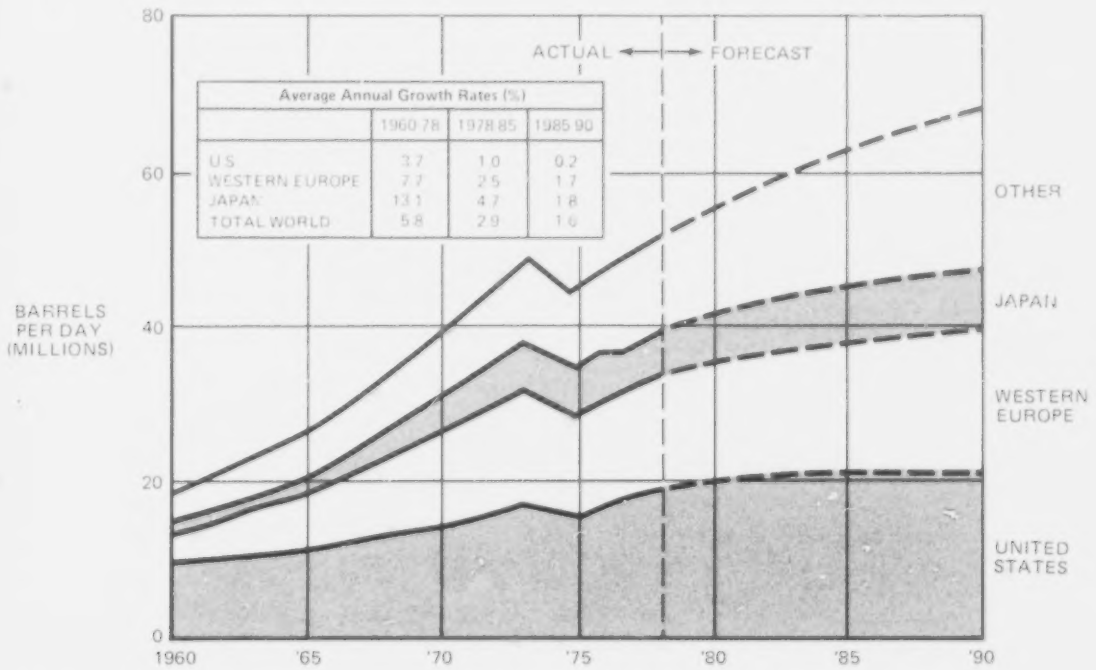
P: Preliminary

* Net demand for refined petroleum products including imports but excluding inventory changes. Historical data estimated by American Petroleum Institute (API).

**Excludes U.S.S.R., P.R.C., and COMECON countries.

Sources: U.S. Dept. of Energy (DOE), and Bureau of Mines (BOM); British Petroleum (BP); Chevron; Exxon; Shell; BCAC.

World* Oil Consumption



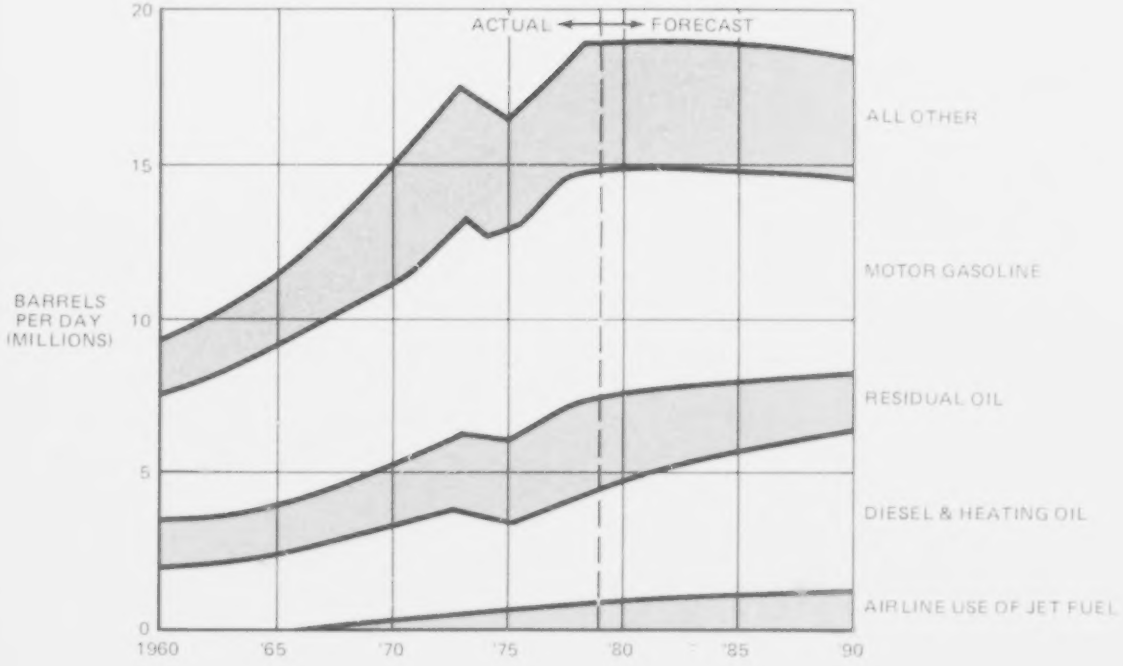
*Excludes U.S.S.R., P.R.C., and COMECON countries

Sources: Chevron; BCAC

Fuel

U.S. Oil Consumption

By Refined Product



Sources: U.S. Civil Aeronautics Board (CAB); DOE; API; BCAC

Energy Use in Air Transportation

U.S. airline fuel consumption is a minor resource drain:

- 6.0%-7.5% of U.S. transportation energy
- 3.5%-4.0% of U.S. petroleum use
- 1.5%-2.0% of total U.S. energy consumption

World demand for aviation fuel is of similar magnitude:

- Western Europe 6.2%*
- Japan 2.7%*
- Latin America 10.3%*
- Total World 9.6%*

*Percent of total transportation energy

Sources: Oak Ridge National Laboratories (ORNL); SRI International.

World Jet Fuel Price*

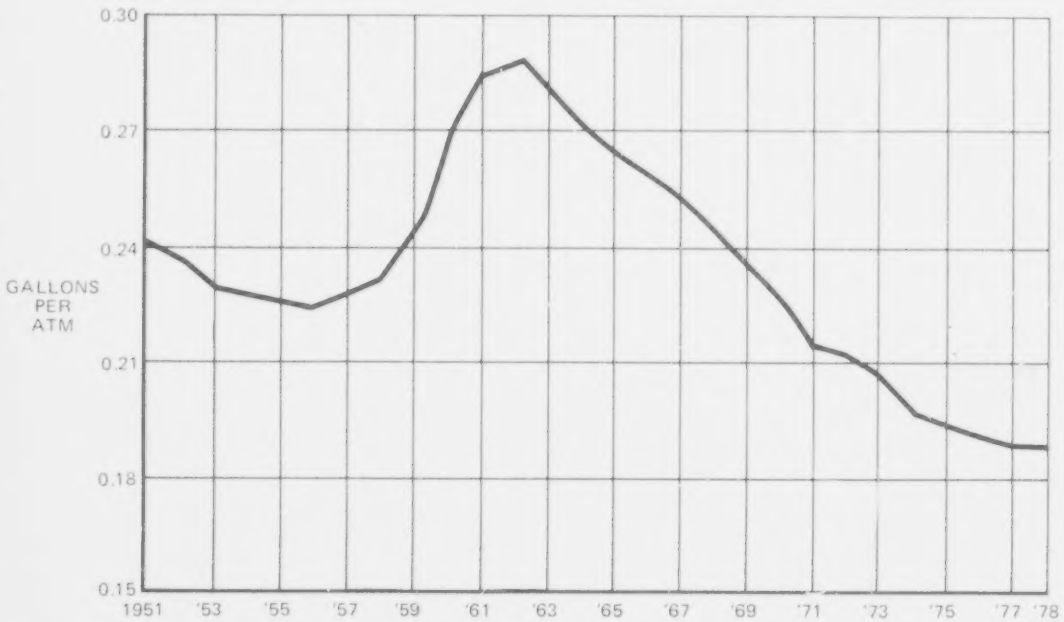
Average Annual—Cents per Gallon

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979 (EST.)
Current Dollars												
INTERNATIONAL	11.0	11.0	11.0	11.7	12.5	15.0	38.5	41.2	41.5	43.3	44.7	65.0
% CHANGE	–	0	0	6.4	6.8	20.0	156.7	7.0	0.7	4.3	3.2	45.4
U.S. DOMESTIC	10.0	10.0	10.0	10.7	11.5	12.5	21.9	27.8	30.6	35.4	38.6	58.0
% CHANGE	–	0	0	7.0	7.5	8.7	75.2	26.9	10.1	15.7	9.0	50.3
1972 Dollars												
INTERNATIONAL	17.5	14.8	12.0	12.2	12.5	14.2	33.2	32.4	31.0	30.6	29.4	39.3
% CHANGE	–	–3.3 AVG	–4.1 AVG	1.7	2.5	13.6	133.8	–2.4	–4.3	–1.3	–3.9	33.7
U.S. DOMESTIC	16.0	13.5	10.9	11.1	11.5	11.8	18.9	21.9	22.9	25.0	25.4	35.0
% CHANGE	–	–3.3 AVG	–4.2 AVG	1.8	3.6	2.6	60.2	15.9	4.6	9.2	1.6	37.8

Sources: U.S. CAB; BCAC.

*Foreign purchases by U.S. airlines

Efficiency Gains in U.S. Airline Unit Fuel Consumption



"From 1973 to 1978, U.S. airlines carried 78 million more passengers with 50 million fewer gallons of fuel -a 40% gain." Air Transport Association of America (ATA)

Source: CAB

Fuel

World* Air Carrier Jet Fuel Consumption

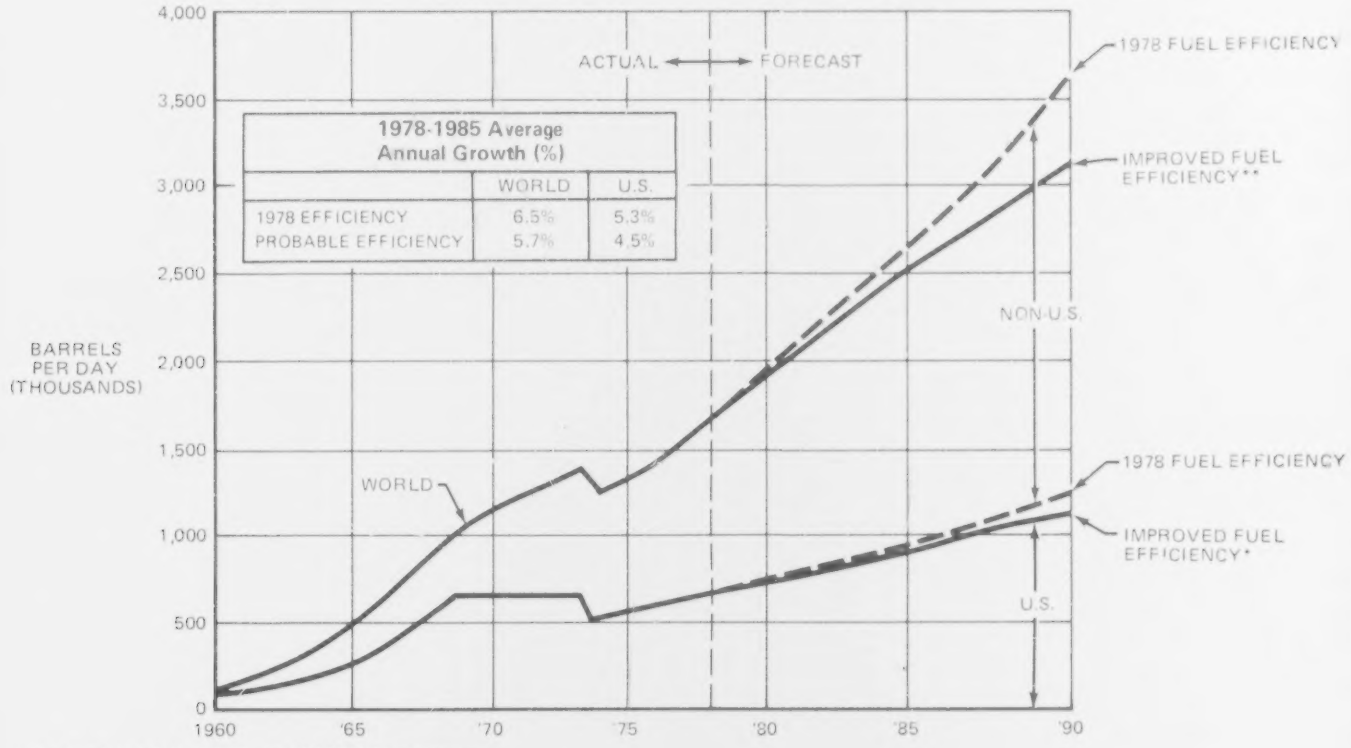
Thousands of Barrels per Day

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977	1978	1985	1990
U.S.*	86.6	305.2	659.0	662.6	672.9	698.2	622.4	624.3	651.7	679.7	701.5	955	1,126
% CHANGE	–	28.7 AVG	16.6 AVG	0.6	1.6	3.8	–10.9	0.3	4.4	4.3	3.2	4.5 AVG	3.4 AVG
NON-U.S.**	66.6	240.7	502.3	572.7	624.3	721.4	684.1	763.9	796.8	895.6	1,039.5	1,604	2,019
% CHANGE	–	29.3 AVG	15.9 AVG	14.0	9.0	15.6	–5.2	11.7	4.3	12.4	16.1	6.4 AVG	4.7 AVG
WORLD***	153.2	545.9	1,161.3	1,235.3	1,297.2	1,419.6	1,306.5	1,388.2	1,448.5	1,575.3	1,741.0	2,559	3,145
% CHANGE	–	28.9 AVG	16.3 AVG	6.4	5.0	9.4	–8.0	6.3	4.3	8.8	10.5	5.7 AVG	4.2 AVG

* U.S./CAB data.
** BCAC estimates using ICAO data.
***Excluding Communist areas.

Notes:
Forecasts include improved fuel efficiency (see graph).
One barrel equals 42 U.S. gallons.

World* Air Carrier Jet Fuel Consumption



* Excludes U.S.S.R., P.R.C., and COMECON countries
**Assuming total fleet improvement of 5% by 1985 and 10% by 1990. 1990 based on estimated 1978-1985 ASM and RTM growth rates.

Sources: ICAO; CAB; BCAC.

World Passenger Traffic

Section 3

This section contains information on the history and forecast of air passenger traffic. The various graphs, tables, and charts provide a perspective on the actual levels, of RPMs, and on growth rates.

Comparative information is displayed by region as well as by individual airlines. The data are also broken down by other informative categories, such as scheduled and charter traffic, and U.S. versus non-U.S. airlines.

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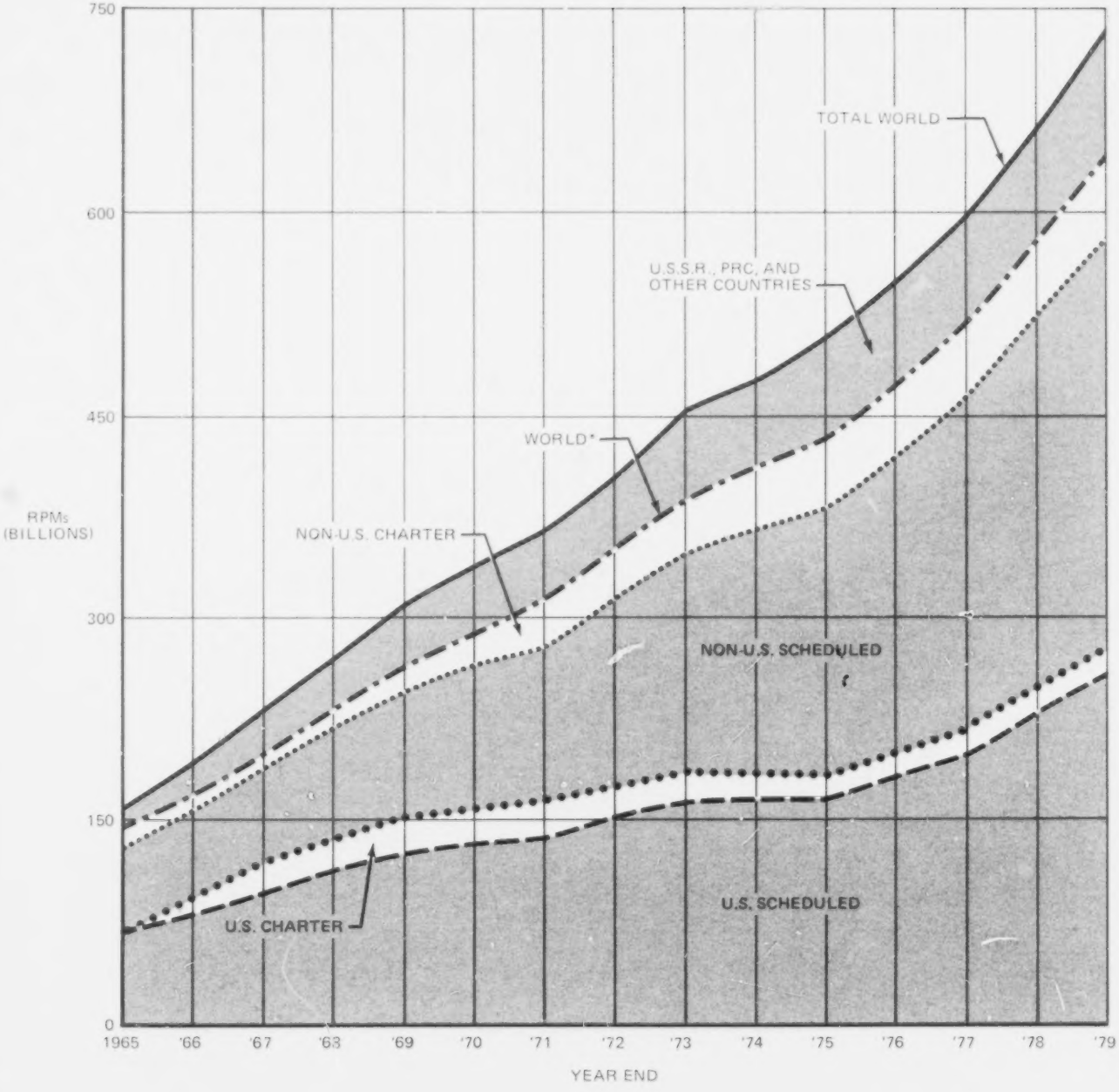
History and Forecast of World RPMs 23

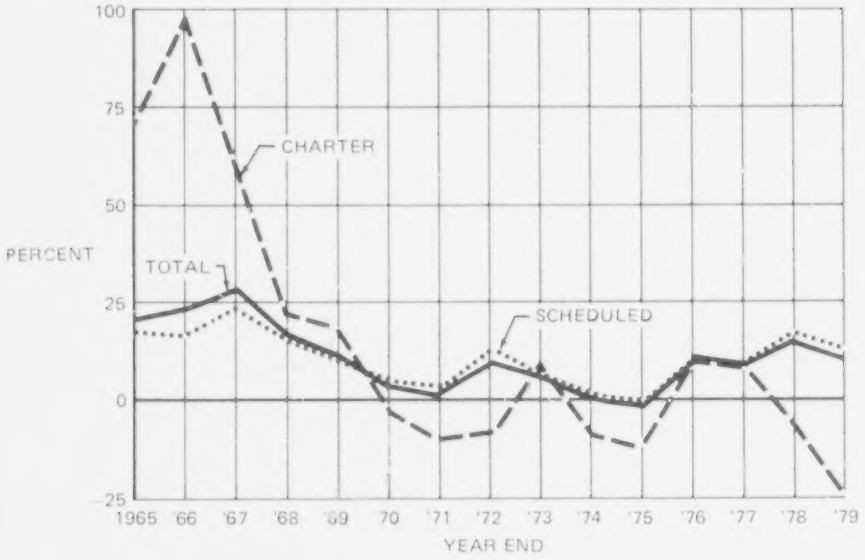
World Passenger Traffic

World Total Revenue Passenger-Miles

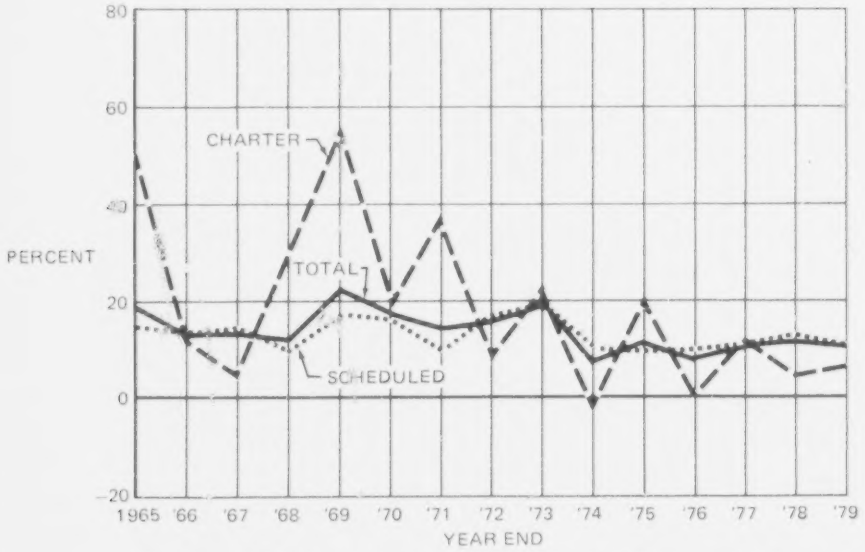


* Excludes U.S.S.R., PRC, and other countries, but includes Taiwan and all-charter carriers.

U.S. Airline Annual Growth



Non-U.S. Airline* Annual Growth

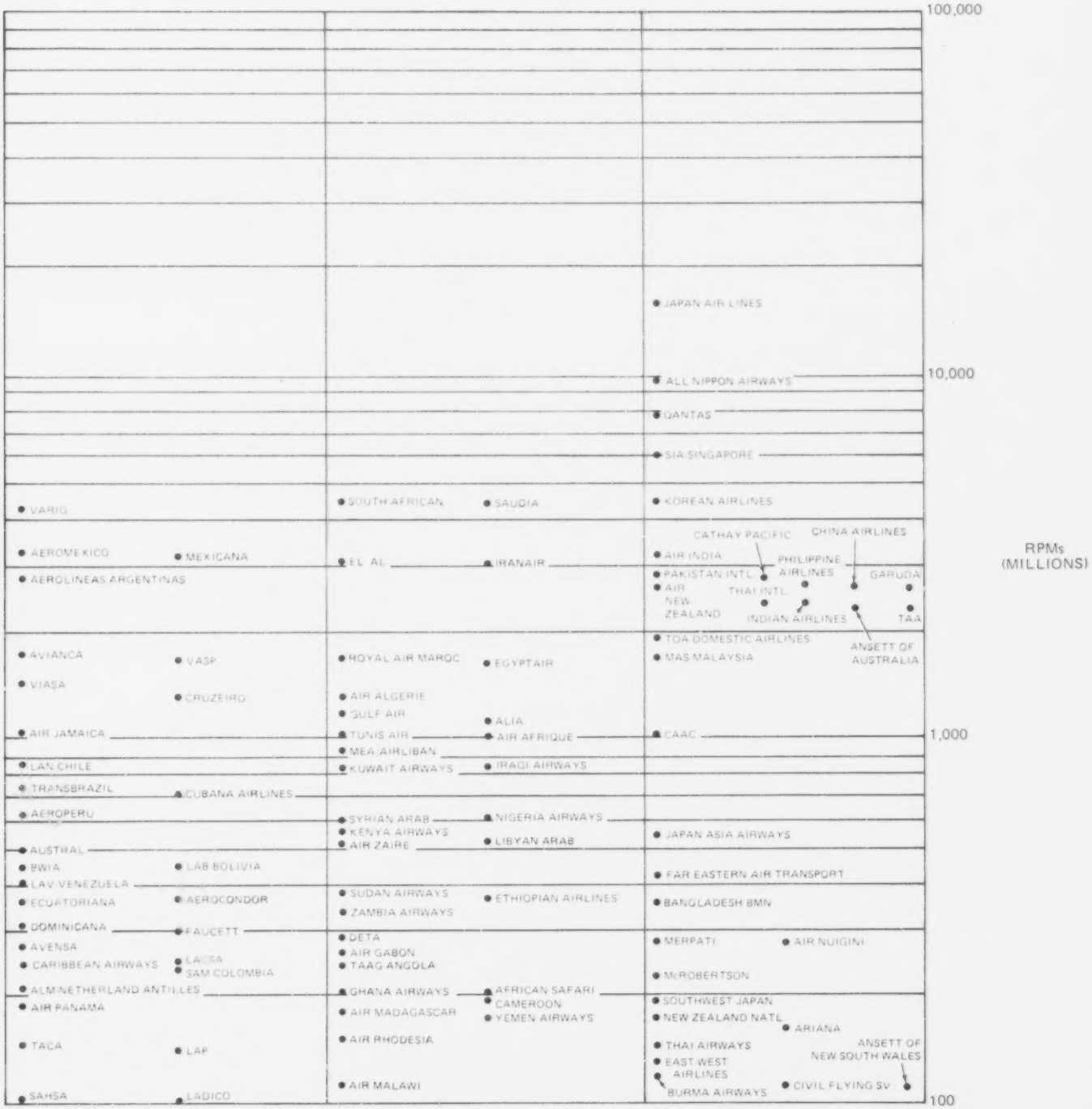


*Excludes U.S.S.R., PRC, and other countries, but includes Taiwan and all-charter carriers.

World Passenger Traffic

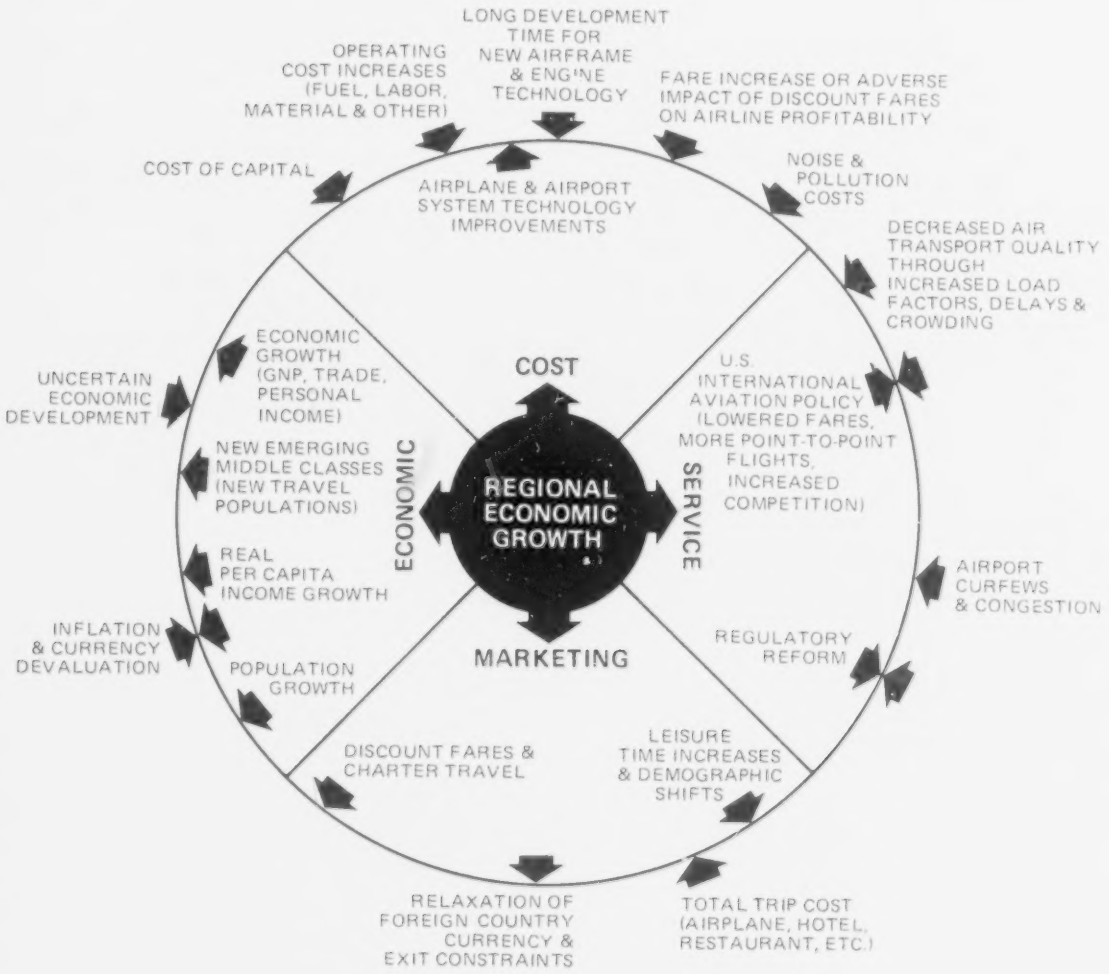
Revenue Passenger-Miles for Airlines of the World—1978

(Grouped by Region of Airline Domicile)


100,000
10,000
1,000
100
RPMs (MILLIONS)
VARIG
AEROMEXICO
MEXICANA
AEROLINEAS ARGENTINAS
AVIANCA
VASP
VIASA
CRUZEIRO
AIR JAMAICA
LAN CHILE
TRANSBRAZIL
CUBANA AIRLINES
AEROPERU
AUSTRAL
BWIA
LAB BOLIVIA
LAV VENEZUELA
ECUATORIANA
AEROCONDOR
DOMINICANA
FAUCETT
AVENSA
CARIBBEAN AIRWAYS
LACSA
SAM COLOMBIA
ALM NETHERLAND ANTILLES
AIR PANAMA
TACA
LAP
SAHSA
LADICO
SOUTH AFRICAN
SAUDIA
EL AL
IRANAIR
ROYAL AIR MAROC
EGYPTAIR
AIR ALGERIE
GULF AIR
ALIA
TUNIS AIR
AIR AFRIQUE
MEA AIRLIBAN
KUWAIT AIRWAYS
IRAQI AIRWAYS
SYRIAN ARAB
NIGERIA AIRWAYS
KENYA AIRWAYS
AIR ZAIRE
LIBYAN ARAB
SUDAN AIRWAYS
ETHIOPIAN AIRLINES
ZAMBIA AIRWAYS
DETA
AIR GABON
TAAG ANGOLA
GHANA AIRWAYS
AFRICAN SAFARI
CAMEROON
AIR MADAGASCAR
YEMEN AIRWAYS
AIR RHODESIA
AIR MALAWI
JAPAN AIR LINES
ALL NIPPON AIRWAYS
QANTAS
SIA SINGAPORE
KOREAN AIRLINES
CATHAY PACIFIC
CHINA AIRLINES
AIR INDIA
PHILIPPINE AIRLINES
PAKISTAN INTL
GARUDA
AIR NEW ZEALAND
THAI INTL
INDIAN AIRLINES
TAA
TOA DOMESTIC AIRLINES
ANSETT OF AUSTRALIA
MAS MALAYSIA
CAAC
JAPAN ASIA AIRWAYS
FAR EASTERN AIR TRANSPORT
BANGLADESH BMN
MERPATI
AIR NUIGINI
McROBERTSON
SOUTHWEST JAPAN
NEW ZEALAND NATL
ARIANA
THAI AIRWAYS
ANSETT OF NEW SOUTH WALES
EAST WEST AIRLINES
BURMA AIRWAYS
CIVIL FLYING SV
Central and South America
Middle East and Africa
Australia, New Zealand, and Far East

World Passenger Traffic

Pressures and Constraints for Airline Growth


LONG DEVELOPMENT TIME FOR NEW AIRFRAME & ENGINE TECHNOLOGY
OPERATING COST INCREASES (FUEL, LABOR, MATERIAL & OTHER)
FARE INCREASE OR ADVERSE IMPACT OF DISCOUNT FARES ON AIRLINE PROFITABILITY
COST OF CAPITAL
AIRPLANE & AIRPORT SYSTEM TECHNOLOGY IMPROVEMENTS
NOISE & POLLUTION COSTS
DECREASED AIR TRANSPORT QUALITY THROUGH INCREASED LOAD FACTORS, DELAYS & CROWDING
ECONOMIC GROWTH (GNP, TRADE, PERSONAL INCOME)
UNCERTAIN ECONOMIC DEVELOPMENT
COST
U.S. INTERNATIONAL AVIATION POLICY (LOWERED FARES, MORE POINT-TO-POINT FLIGHTS, INCREASED COMPETITION)
NEW EMERGING MIDDLE CLASSES (NEW TRAVEL POPULATIONS)
ECONOMIC
REGIONAL ECONOMIC GROWTH
SERVICE
REAL PER CAPITA INCOME GROWTH
AIRPORT CURFEWS & CONGESTION
INFLATION & CURRENCY DEVALUATION
MARKETING
REGULATORY REFORM
POPULATION GROWTH
DISCOUNT FARES & CHARTER TRAVEL
LEISURE TIME INCREASES & DEMOGRAPHIC SHIFTS
RELAXATION OF FOREIGN COUNTRY CURRENCY & EXIT CONSTRAINTS
TOTAL TRIP COST (AIRPLANE, HOTEL, RESTAURANT, ETC.)

Key Issues

U.S. Airlines

- New regulatory environment
  - Route entry/exit
  - Fare and service policies
  - Cost recovery
  - Competitive situation
- Operational flexibility versus long-term commitments
  - Fleet composition/utilization
  - Airport facilities
- Airport/airspace system capacity
- International aviation policy
- Fuel availability/price
- Marketing direction

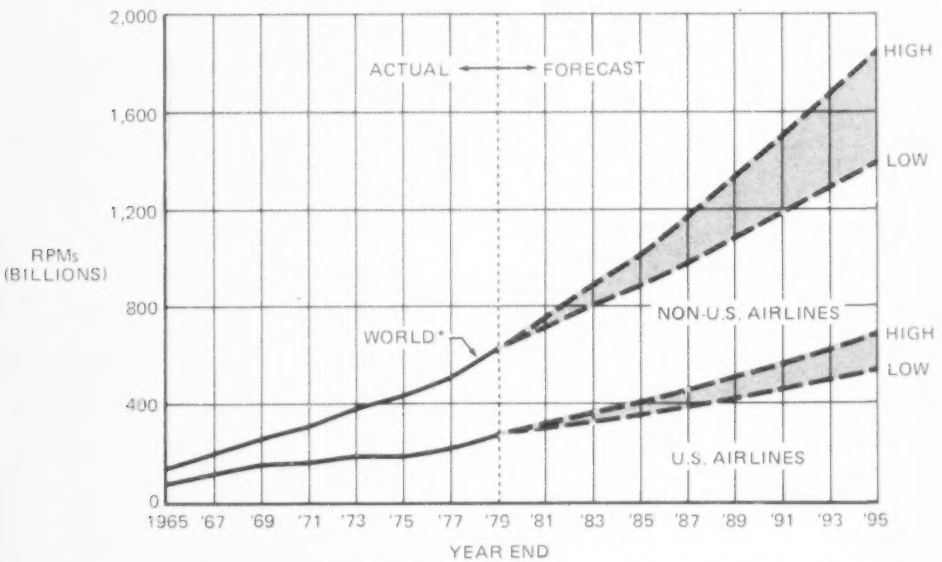
Non-U.S. Airlines

- U.S. international aviation policy
- New bilaterals
  - Route and capacity controls
  - Fifth freedom
  - Pooling
- Discount fares
- Fuel availability/price

World Revenue Passenger-Miles

Growth Rate (Percent)

					LOW			HIGH		
	1960-1965	1965-1970	1970-1975	1975-1979	1979-1985	1985-1990	1990-1995	1979-1985	1985-1990	1990-1995
WORLD	13.4	15.9	8.2	10.5	5.9	5.2	3.9	8.2	6.7	5.4
TOTAL NON-U.S.	14.6	15.5	13.7	10.3	6.8	5.7	4.2	9.4	7.3	5.7
TOTAL U.S.	12.5	16.3	2.9	10.7	4.5	4.4	3.5	6.5	5.7	4.8



*Excludes U.S.S.R., PRC, and other countries, but includes Taiwan and all-charter carriers.

World Passenger Traffic

History and Forecast of RPMs for World Airlines

(Billions)

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977
TOTAL U.S. CARRIERS										
SCHEDULED	39.0	69.4	133.4	137.2	154.7	164.5	166.3	166.7	182.2	197.0
CHARTER	2.9	6.1	27.0	24.2	23.1	24.2	22.0	19.3	21.1	22.9
TOTAL	41.9	75.5	160.3	162.0	176.8	188.7	188.3	186.0	203.2	219.9
TOTAL NON-U.S. CARRIERS (ICAO PLUS TAIWAN)										
SCHEDULED	28.7	54.3	105.7	115.9	135.6	161.7	178.0	194.9	214.5	238.1
CHARTER	3.0	8.2	22.5	30.9	33.4	40.4	40.0	48.3	48.4	54.3
TOTAL	31.7	62.5	128.2	146.7	169.3	202.6	218.0	243.1	262.9	292.4
U.S. & NON-U.S. CARRIERS										
SCHEDULED	67.6	123.6	239.1	253.6	290.6	326.2	344.3	360.6	396.7	435.1
CHARTER	5.9	14.3	49.4	55.1	56.5	65.1	62.0	67.5	69.4	77.2
TOTAL	73.5	138.0	288.5	308.7	346.1	391.3	406.3	428.1	466.1	512.3
U.S.S.R., P.R. OF CHINA & OTHER MISC. COUNTRIES	7.7	23.9	50.0	56.3	60.6	62.5	68.9	77.1	82.9	80.9
TOTAL WORLD	81.2	161.9	338.5	365.0	406.7	453.9	475.2	505.2	549.0	593.1

History and Forecast of RPMs for World Airlines

(Percent)

	1960 -65	1965 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78
TOTAL U.S. CARRIERS										
SCHEDULED	12.2	14.0	3.3	12.8	6.4	1.1	-0.4	9.9	8.1	17.4
CHARTER	16.5	34.6	-10.2	-8.7	9.4	-9.1	-12.4	9.3	8.6	-6.0
TOTAL	12.5	16.3	1.0	9.2	6.7	-0.2	-1.8	9.9	8.2	15.0
TOTAL NON-U.S. CARRIERS (ICAO PLUS TAIWAN)										
SCHEDULED	13.6	14.3	9.6	17.3	18.9	10.1	9.5	10.1	11.0	13.3
CHARTER	22.1	22.3	37.3	8.1	22.7	-2.2	20.6	0.2	12.3	4.3
TOTAL	14.6	15.5	14.5	15.4	19.7	7.6	11.5	8.1	11.2	11.6
U.S. & NON-U.S. CARRIERS										
SCHEDULED	12.8	14.1	6.1	14.6	12.2	5.5	4.7	10.0	9.7	15.1
CHARTER	19.5	28.1	11.4	0.7	17.4	-4.8	8.9	2.8	11.1	1.3
TOTAL	13.4	15.9	7.0	12.1	13.1	3.8	5.4	8.9	9.9	13.0
U.S.S.R., P.R. OF CHINA & OTHER MISC. COUNTRIES	25.5	15.9	12.5	7.7	3.3	10.2	11.9	7.6	-2.5	10.0
TOTAL WORLD	14.8	15.9	7.8	11.4	11.6	4.7	6.3	8.7	8.0	12.6

Note: Weighted average total

1978	EST. 1979	LOW 1980	HIGH 1980	LOW 1985	HIGH 1985	LOW 1990	HIGH 1990	LOW 1995	HIGH 1995	
										TOTAL U.S. CARRIERS
231.3	261.4	271.7	281.6	346.9	384.4	426.1	506.0	505.5	636.5	SCHEDULED
21.5	16.3	15.8	17.3	15.3	21.5	23.2	30.7	27.4	40.6	CHARTER
252.7	277.7	287.5	298.9	362.2	405.9	449.3	536.7	532.9	677.1	TOTAL
										TOTAL NON-U.S. CARRIERS (ICAO PLUS TAIWAN)
269.7	299.6	326.0	334.0	455.3	523.0	607.4	752.2	757.0	1007.0	SCHEDULED
56.6	60.3	62.0	66.0	80.0	93.9	98.0	123.6	111.0	150.0	CHARTER
326.3	359.9	388.0	400.0	535.3	616.9	705.4	875.8	868.0	1157.0	TOTAL
										U.S. & NON-U.S. CARRIERS
501.0	561.0	597.7	615.6	802.2	907.4	1033.5	1258.2	1262.5	1643.5	SCHEDULED
78.1	76.6	77.8	83.3	95.3	115.4	121.2	154.3	138.4	190.6	CHARTER
579.1	637.6	675.5	698.9	897.5	1022.8	1154.7	1412.5	1400.9	1834.1	TOTAL
										U.S.S.R., P.R. OF CHINA
89.0	94.9	101.8	106.0	129.9	141.9	159.9	185.5	189.9	236.8	& OTHER MISC. COUNTRIES
668.0	732.5	777.3	804.9	1027.4	1164.7	1314.6	1598.0	1590.8	2070.9	TOTAL WORLD

1978 -79	LOW 1979 -80	HIGH 1979 -80	LOW 1980 -85	HIGH 1980 -85	LOW 1985 -90	HIGH 1985 -90	LOW 1990 -95	HIGH 1990 -95	
									TOTAL U.S. CARRIERS
13.0	3.9	7.7	5.0	6.4	4.2	5.7	3.5	4.7	SCHEDULED
-24.2	-3.1	6.1	-0.6	4.4	8.7	7.4	3.4	5.7	CHARTER
9.9	3.5	7.6	4.7	6.3	4.4	5.7	3.5	4.8	TOTAL
									TOTAL NON-U.S. CARRIERS (ICAO PLUS TAIWAN)
11.1	8.8	11.5	6.9	9.4	5.9	7.5	4.5	6.0	SCHEDULED
6.5	2.8	9.5	5.2	7.3	4.1	5.7	2.5	3.9	CHARTER
10.3	7.8	11.1	6.6	9.1	5.7	7.3	4.2	5.7	TOTAL
									U.S. & NON-U.S. CARRIERS
12.0	6.5	9.7	6.1	8.1	5.2	6.8	4.1	5.5	SCHEDULED
-2.0	1.6	8.8	4.1	6.7	4.9	6.0	2.7	4.3	CHARTER
10.1	5.9	9.6	5.8	7.9	5.2	6.7	3.9	5.4	TOTAL
									U.S.S.R., R.P. OF CHINA
6.6	7.3	11.7	5.0	6.0	4.2	5.5	3.5	5.0	& OTHER MISC. COUNTRIES
9.6	6.1	9.9	5.7	7.7	5.1	6.5	3.9	5.3	TOTAL WORLD

World Passenger Traffic

History and Forecast of RPMs for U.S. Airlines

(Billions)

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977
U.S. DOMESTIC										
TRUNKS & PAA										
SCHEDULED	29.2	49.0	95.9	97.6	108.0	114.0	112.6	119.4	131.4	141.3
CHARTER	0.2	1.1	4.1	3.0	3.4	3.9	3.7	4.0	5.4	5.8
TOTAL	29.4	50.1	100.0	100.6	111.4	118.8	121.3	123.4	137.0	147.1
REGIONAL										
SCHEDULED	1.4	3.6	9.8	10.8	12.2	13.8	14.5	15.2	17.0	19.1
CHARTER	0.0	0.0	0.4	0.3	0.2	0.3	0.2	0.3	0.5	0.8
TOTAL	1.4	3.6	10.2	11.1	12.5	13.9	15.1	15.5	17.6	19.9
ALL-CARGO & SUPPLEMENTAL	0.5	0.5	1.1	0.9	1.7	2.0	1.9	0.9	0.9	1.0
SCHEDULED	30.7	52.6	105.8	108.4	120.2	128.5	132.5	134.6	148.5	160.4
CHARTER	0.8	1.6	5.3	4.3	4.5	6.1	5.7	5.2	7.0	7.6
TOTAL U.S. DOMESTIC	31.5	54.2	111.1	112.7	124.7	134.6	138.2	139.8	155.5	168.0
COMMUTERS & HELICOPTERS (NOT INCLUDED ABOVE)	0.2	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8	1.0
U.S. INTERNATIONAL										
TRUNKS & PAA										
SCHEDULED	8.3	16.8	27.6	29.4	34.5	36.1	35.8	31.1	33.7	36.6
CHARTER	0.5	2.5	8.4	7.6	7.1	7.4	6.5	5.2	5.9	5.4
TOTAL	8.8	19.3	36.0	37.0	41.5	43.4	40.3	36.3	39.6	42.1
ALL-CARGO & SUPPLEMENTAL	1.5	2.0	13.1	12.3	10.2	10.7	9.8	8.9	8.1	9.8
SCHEDULED	8.3	16.8	27.6	29.4	34.5	36.1	34.8	31.1	33.7	36.6
CHARTER	2.0	4.5	21.5	19.9	17.2	18.1	16.3	14.1	14.0	15.2
TOTAL U.S. INTERNATIONAL	10.3	21.3	49.0	49.3	51.7	54.1	50.1	45.2	47.7	51.8
TOTAL U.S. DOMESTIC & INTERNATIONAL										
SCHEDULED	39.0	69.4	133.4	137.7	154.7	164.6	166.3	165.7	182.2	197.0
CHARTER	2.8	6.1	27.0	24.2	22.1	24.2	22.0	19.3	21.1	22.9
TOTAL U.S. CARRIERS	41.8	75.5	160.3	162.0	176.8	188.7	188.3	185.0	203.2	219.9

BOEING

1979	EST. 1979	LOW 1980	HIGH 1980	LOW 1985	HIGH 1985	LOW 1990	HIGH 1990	LOW 1995	HIGH 1995	
										U.S. DOMESTIC
164.2	180.7	186.1	193.3	231.9	258.7	276.7	331.8	325.5	413.5	TRUNKS & PAA
4.1	4.1	2.8	3.1	2.7	3.5	4.0	5.3	4.9	8.3	SCHEDULED
										CHARTER
168.3	184.8	188.9	196.4	234.6	262.2	280.7	337.1	330.4	421.8	TOTAL
23.0	27.9	30.1	31.7	43.2	49.2	57.8	72.3	68.6	93.6	REGIONAL
1.1	0.9	0.7	0.8	0.7	1.2	1.0	2.0	1.1	2.8	SCHEDULED
										CHARTER
24.1	28.8	30.8	32.5	43.9	50.4	58.8	74.3	69.7	96.4	TOTAL
1.3	1.4	1.1	1.2	1.4	1.8	2.1	2.4	2.7	3.4	ALL-CARGO & SUPPLEMENTAL
187.3	208.6	216.2	225.0	275.1	307.9	334.5	404.1	394.1	507.1	SCHEDULED
6.4	4.9	4.6	5.1	4.8	6.5	7.1	9.7	8.7	14.5	CHARTER
193.7	213.4	220.8	230.1	279.9	314.4	341.6	413.8	402.8	521.6	TOTAL U.S. DOMESTIC
3.2	3.4	1.6	1.7	3.6	4.2	6.3	8.4	9.3	13.5	COMMUTERS & HELICOPTERS (NOT INCLUDED ABOVE)
										U.S. INTERNATIONAL
44.1	52.9	55.5	56.6	71.8	76.5	91.6	101.9	111.4	129.4	TRUNKS & PAA
4.0	2.3	2.2	2.7	2.5	3.0	3.8	4.2	4.1	4.6	SCHEDULED
										CHARTER
48.1	55.2	57.7	59.3	74.3	79.5	95.4	106.1	115.5	134.0	TOTAL
11.1	8.7	9.0	9.5	8.0	12.0	12.3	16.8	14.6	21.5	ALL-CARGO & SUPPLEMENTAL
44.1	52.9	55.5	56.6	71.8	76.5	91.6	101.9	111.4	129.4	SCHEDULED
15.1	11.4	11.2	12.2	10.5	15.5	16.1	21.0	18.7	26.1	CHARTER
59.2	64.3	66.7	68.8	82.3	91.5	107.7	122.9	130.1	155.5	TOTAL U.S. INTERNATIONAL
										TOTAL U.S. DOMESTIC & INTERNATIONAL
233.3	261.4	271.7	281.6	346.9	384.4	426.1	506.0	505.5	636.5	SCHEDULED
21.5	15.3	15.8	17.3	15.3	21.5	23.2	30.7	27.4	40.6	CHARTER
252.7	277.7	287.5	298.9	362.2	405.9	449.3	536.7	532.9	677.1	TOTAL U.S. CARRIERS

World Passenger Traffic

History and Forecast of RPMs for U.S. Airlines

(Percent)

	1960 -65	1965 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78
U.S. DOMESTIC										
TRUNKS & PAA										
SCHEDULED	10.9	14.4	1.9	10.4	6.4	2.4	1.1	10.0	7.2	11.2
CHARTER	47.9	20.2	-26.9	13.6	12.4	-6.2	7.2	48.1	4.6	-20.6
TOTAL	11.3	14.8	0.6	10.7	6.6	2.1	1.3	11.0	7.4	10.4
REGIONAL										
SCHEDULED	20.4	22.1	9.6	14.7	19.6	9.0	3.1	17.1	18.4	20.2
CHARTER	1.4	68.5	13.2	-29.4	12.5	-14.8	56.8	48.6	44.6	52.1
TOTAL	20.1	23.0	9.9	12.4	18.7	6.4	3.7	18.4	18.4	20.7
ALL-CARGO & SUPPLEMENTAL	-4.9	13.7	-12.8	44.7	41.4	-10.8	-68.7	2.2	14.4	34.4
SCHEDULED	11.4	15.0	2.4	12.0	8.0	4.1	1.3	10.3	8.0	15.7
CHARTER	15.1	27.2	-21.8	14.4	29.2	-6.4	-9.6	39.5	6.8	-19.6
TOTAL U.S. DOMESTIC	11.5	15.3	1.2	11.3	7.4	3.7	1.3	11.0	8.1	14.2
COMMUTERS & HELICOPTERS (NOT INCLUDED ABOVE)	8.4	9.0	4.1	10.5	9.3	13.6	8.0	0.9	21.8	27.3
U.S. INTERNATIONAL										
TRUNKS & PAA										
SCHEDULED	15.1	10.4	6.6	17.6	4.8	-6.3	-8.1	8.8	8.6	20.5
CHARTER	35.7	27.7	-9.2	-7.4	4.8	-11.4	-19.6	13.5	-7.7	-25.7
TOTAL	16.9	13.3	2.9	12.3	4.8	-7.3	-9.9	9.2	8.2	19.4
ALL-CARGO & SUPPLEMENTAL	6.0	46.7	-6.0	-17.5	9.1	-8.9	-6.2	-8.7	20.3	17.3
SCHEDULED	15.1	10.4	6.6	17.5	4.8	-6.3	-8.1	8.8	8.6	20.5
CHARTER	17.1	38.6	-7.2	-13.7	4.9	-9.4	-13.3	-0.5	9.4	-1.0
TOTAL U.S. INTERNATIONAL	15.5	18.2	0.5	4.6	4.7	-7.5	-9.9	4.7	8.6	14.2
TOTAL U.S. DOMESTIC & INTERNATIONAL										
SCHEDULED	12.2	14.0	3.3	12.3	6.4	1.1	-0.6	9.9	8.1	17.4
CHARTER	16.5	34.6	-10.2	-8.7	9.4	-9.1	-12.4	4.3	8.6	-6.0
TOTAL U.S. CARRIERS	12.5	16.3	1.0	9.2	6.7	-0.2	-1.8	9.9	8.2	15.0

Note: Weighted average total

1979 -79	LOW 1979 -80	HIGH 1979 -80	LOW 1980 -85	HIGH 1980 -85	LOW 1985 -90	HIGH 1985 -90	LOW 1990 -95	HIGH 1990 -95	
									U.S. DOMESTIC
									TRUNKS & PAA
10.1	3.0	7.0	4.5	6.0	3.6	5.1	3.3	4.5	SCHEDULED
-23.9	-9.7	0.0	-0.7	2.5	8.2	8.7	4.1	9.4	CHARTER
9.5	2.8	6.9	4.4	5.9	3.7	5.2	3.3	4.6	TOTAL
									REGIONAL
20.9	8.3	14.0	7.5	9.2	6.0	8.0	3.5	5.3	SCHEDULED
-25.2	-12.5	0.0	0.0	8.4	7.4	10.8	1.9	7.0	CHARTER
19.9	7.7	13.6	7.3	9.2	6.0	8.1	3.5	5.3	TOTAL
-21.0	10.0	20.0	4.9	8.4	8.4	5.9	5.2	7.2	ALL-CARGO & SUPPLEMENTAL
11.4	3.7	7.9	4.0	6.5	4.0	5.6	3.3	4.6	SCHEDULED
-27.7	-6.1	4.1	0.9	5.0	8.1	8.3	4.1	8.4	CHARTER
10.2	3.5	7.8	4.0	6.4	4.1	5.6	3.4	4.7	TOTAL U.S. DOMESTIC
16.7	14.0	21.0	18.0	20.0	12.0	15.0	8.0	10.0	COMPUTERS & HELICOPTERS (NOT INCLUDED ABOVE)
									U.S. INTERNATIONAL
									TRUNKS & PAA
20.0	4.9	7.0	5.3	6.2	5.0	5.9	4.0	4.9	SCHEDULED
-32.3	-18.5	0.0	2.6	2.1	8.7	7.0	1.5	1.8	CHARTER
19.9	3.8	6.7	5.2	6.0	5.1	5.9	3.9	4.8	TOTAL
-21.5	3.4	9.2	-2.3	4.8	9.0	7.0	3.5	5.1	ALL-CARGO & SUPPLEMENTAL
20.0	4.9	7.0	5.3	6.2	5.0	5.9	4.0	4.9	SCHEDULED
-24.4	-1.8	7.0	-1.3	4.2	8.9	7.0	3.0	4.4	CHARTER
9.3	3.7	7.0	4.3	5.9	5.5	6.1	3.9	4.8	TOTAL U.S. INTERNATIONAL
									TOTAL U.S. DOMESTIC & INTERNATIONAL
13.0	3.9	7.7	5.0	6.4	4.2	5.7	3.5	4.7	SCHEDULED
-24.2	-3.1	6.1	-0.6	4.4	8.7	7.4	3.4	5.7	CHARTER
9.9	3.5	7.6	4.7	6.3	4.4	5.7	3.5	4.8	TOTAL U.S. CARRIERS

World Passenger Traffic

History and Forecast of RPMs for Non-U.S. Airlines

(Billions)

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977
SCHEDULED SERVICES										
EUROPE	14.9	28.3	53.4	58.0	67.7	77.9	80.8	84.6	92.2	99.2
ASIA & PACIFIC	4.5	10.4	23.0	26.9	31.0	41.2	47.2	54.1	59.6	69.5
LATIN AMERICA, CARIBBEAN & CANADA	7.2	10.9	20.2	21.5	25.2	29.0	33.8	36.9	39.3	42.3
AFRICA	1.2	2.5	4.6	5.6	6.2	7.3	8.6	10.1	10.4	11.6
MIDDLE EAST	0.6	2.2	4.3	5.1	5.8	6.4	7.0	9.3	12.1	15.3
TOTAL	28.7	54.3	105.7	115.9	135.9	161.7	179.0	194.9	214.6	238.1
TOTAL CHARTER SERVICES	3.0	8.2	22.5	30.9	33.4	40.9	40.0	48.3	48.4	54.3
TOTAL NON-U.S. CARRIERS	31.7	62.5	128.2	146.7	169.3	202.6	218.0	243.1	263.0	292.4
U.S.S.R., P.R. OF CHINA & OTHER MISC. COUNTRIES	7.7	23.9	50.0	56.3	60.6	62.5	68.9	77.1	82.8	80.9
TOTAL WORLD NON-U.S. CARRIERS	39.4	86.4	178.2	203.0	229.9	265.1	286.9	320.2	345.8	373.3

History and Forecast of RPMs for Non-U.S. Airlines

(Percent)

	1960 -65	1965 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -79
SCHEDULED SERVICES										
EUROPE	13.8	13.5	8.7	16.8	14.0	3.4	5.2	9.0	7.6	13.8
ASIA & PACIFIC	18.3	17.2	12.2	20.3	32.9	14.7	14.6	10.1	14.8	13.9
LATIN AMERICA, CARIBBEAN & CANADA	8.5	13.2	6.3	17.3	15.1	16.7	8.7	6.7	7.8	9.8
AFRICA	15.3	14.5	14.1	11.1	17.7	17.8	17.0	3.0	12.1	13.4
MIDDLE EAST	20.4	14.4	18.2	15.6	9.4	22.7	18.5	29.7	27.1	16.6
TOTAL	13.6	14.3	9.6	17.3	18.9	10.1	9.5	10.1	11.0	13.5
TOTAL CHARTER SERVICES	22.1	22.3	37.3	8.1	22.7	-2.2	20.6	0.2	12.3	4.3
TOTAL NON-U.S. CARRIERS	14.6	15.5	14.5	15.4	19.7	7.6	11.5	8.1	11.2	11.6
U.S.S.R., P.R. OF CHINA & OTHER MISC. COUNTRIES	25.5	15.9	12.5	7.7	3.3	10.2	11.9	7.6	-2.5	10.0
TOTAL WORLD NON-U.S. CARRIERS	17.0	15.6	13.9	13.2	15.3	8.2	11.6	8.0	7.9	11.3

Note: Weighted average total

1978	EST. 1979	LOW 1980	HIGH 1980	LOW 1985	HIGH 1985	LOW 1990	HIGH 1990	LOW 1995	HIGH 1995	
										SCHEDULED SERVICES
112.9	122.4	133.0	135.0	180.0	206.6	228.1	282.5	266.0	355.0	EUROPE
79.3	88.4	100.0	102.0	143.1	164.4	198.0	245.2	261.0	348.0	ASIA & PACIFIC
										LATIN AMERICA,
46.5	50.9	54.0	56.0	72.2	83.0	96.0	118.8	119.0	158.0	CARIBBEAN & CANADA
13.2	15.0	16.0	17.0	23.6	27.1	34.2	42.4	46.0	61.0	AFRICA
17.9	28.8	23.0	24.0	36.4	41.9	51.1	63.3	65.0	85.0	MIDDLE EAST
269.7	305.5	326.0	334.0	455.3	523.0	607.4	752.2	757.0	1007.0	TOTAL
56.6	60.3	62.0	66.0	80.0	93.9	98.0	123.6	111.0	150.0	TOTAL CHARTER SERVICES
326.3	366.0	388.0	400.0	535.3	616.9	705.4	875.8	868.0	1157.0	TOTAL NON-U.S. CARRIERS
										U.S.S.R., P.R. OF CHINA
88.0	94.6	101.8	106.0	129.9	141.9	159.9	185.5	189.9	236.8	& OTHER MISC. COUNTRIES
414.3	454.8	489.8	506.0	665.2	758.8	865.3	1061.3	1057.9	1393.8	TOTAL WORLD NON-U.S. CARRIERS

1978 -79	LOW 1979 -80	HIGH 1979 -80	LOW 1980 -85	HIGH 1980 -85	LOW 1985 -90	HIGH 1985 -90	LOW 1990 -95	HIGH 1990 -95	
									SCHEDULED SERVICES
8.4	8.5	10.2	6.2	8.9	4.9	6.5	3.1	4.7	EUROPE
14.1	10.6	12.8	7.4	10.0	6.7	8.3	5.7	7.3	ASIA & PACIFIC
									LATIN AMERICA,
8.4	6.1	10.1	6.0	8.2	5.9	7.4	4.4	5.9	CARIBBEAN & CANADA
13.7	6.8	13.5	8.1	9.8	7.7	9.4	6.1	7.5	AFRICA
16.2	10.8	15.6	9.6	11.8	7.0	8.6	4.9	6.1	MIDDLE EAST
11.1	8.8	11.5	6.9	9.4	5.9	7.5	4.5	6.0	TOTAL
6.5	2.8	9.5	5.2	7.3	4.1	5.7	2.5	3.9	TOTAL CHARTER SERVICES
10.9	7.9	11.1	6.6	9.1	5.7	7.3	4.2	5.7	TOTAL NON-U.S. CARRIERS
									U.S.S.R., P.R. OF CHINA
6.6	7.3	11.7	5.0	6.0	4.2	5.5	3.5	5.0	& OTHER MISC. COUNTRIES
9.8	7.7	11.3	6.3	8.4	5.4	6.9	4.1	5.6	TOTAL WORLD NON-U.S. CARRIERS

World Cargo Traffic

Section 4

This section provides a perspective on world air cargo and historical RTMs. The traffic is broken down into various categories such as freight, mail, U.S.-airline traffic, non-U.S.-airline traffic, scheduled freight, and non-scheduled freight. The factors influencing air freight growth are outlined and the principal components of cargo are forecast through 1995.

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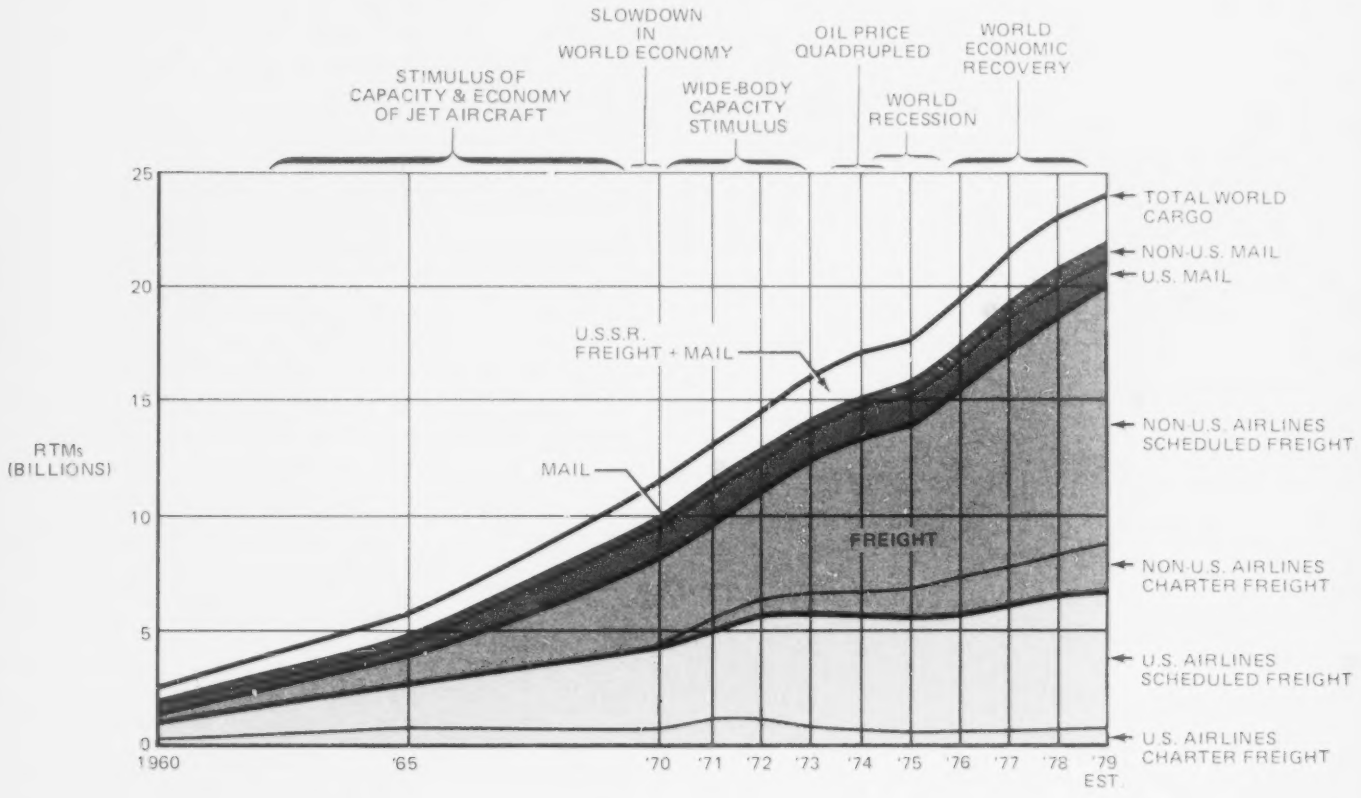
World Cargo Traffic

Historical Profile of Cargo RTMs



Freight Growth Highlights

- In the 1960s, rapidly expanding capacity of efficient jetliners contributed to an average annual growth of 16.6%.
- 1970-1973 brought an initial slowdown due to lower world GNP growth, followed by a surge due to trade expansion and wide-body aircraft capabilities.
- In 1974 and 1975, air freight growth slowed to 5% per year, a result of the world recession and fuel cost impacts on air freight rates.
- A strong recovery in growth began in 1976 and continued through 1979, spurred by economic and trade growth and development of airline cargo systems and marketing.

Mail Growth Highlights

- U.S. airlines' mail traffic surged in the 1960s with the domestic priority mail program and overseas military mail. Non-U.S. airlines' mail has expanded steadily, averaging over 8% annual growth since 1960.

Composition of World Air Cargo in 1979

	RTMs (BILLIONS)	PERCENT OF TOTAL WORLD CARGO	
SCHEDULED FREIGHT			
U.S. AIRLINES	5.97	24.7	
NON-U.S. AIRLINES	11.40	47.1	
			71.8
CHARTER FREIGHT			
U.S. AIRLINES	0.74	3.1	
NON-U.S. AIRLINES	2.06	8.5	
			11.6
MAIL			
U.S. AIRLINES	1.22	5.0	
NON-U.S. AIRLINES	0.79	3.3	
			8.3
U.S.S.R. (FREIGHT AND MAIL)	2.02	8.3	
			8.3
TOTAL WORLD CARGO	24.20		100.0

Average Annual Growth Rates (Percent)

	1960-1965	1965-1970	1970-1975	1975-1979
SCHEDULED FREIGHT				
U.S. AIRLINES	20.9	14.0	6.5	5.7
NON-U.S. AIRLINES	16.1	20.0	14.2	12.5
TOTAL	18.6	16.8	10.7	9.9
CHARTER FREIGHT				
U.S. AIRLINES	20.2	–0.2	–2.4	3.1
NON-U.S. AIRLINES	–	–	28.8	11.8
TOTAL	–	–	2.0	9.1
TOTAL FREIGHT				
U.S. AIRLINES	20.7	10.6	5.1	5.4
NON-U.S. AIRLINES	16.1	20.0	18.6	12.4
TOTAL	18.9	14.4	8.7	9.8
MAIL				
U.S. AIRLINES	14.6	24.6	–5.7	2.4
NON-U.S. AIRLINES	9.1	9.0	6.7	8.8
TOTAL	12.5	20.1	–2.5	4.7
U.S.S.R. (FREIGHT AND MAIL)	18.9	7.0	7.0	3.4
GRAND TOTAL	17.9	14.2	9.6	8.7

Note: Weighted average total

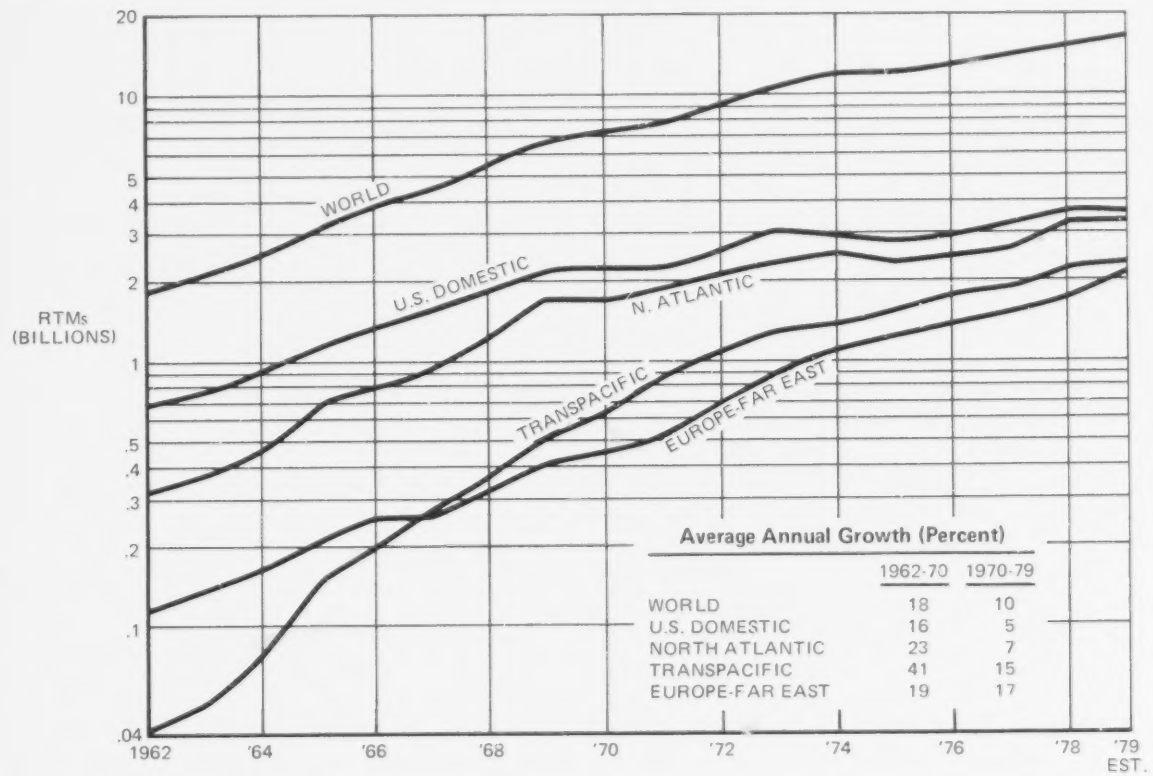
World Cargo Traffic

Historical Growth of Major Markets

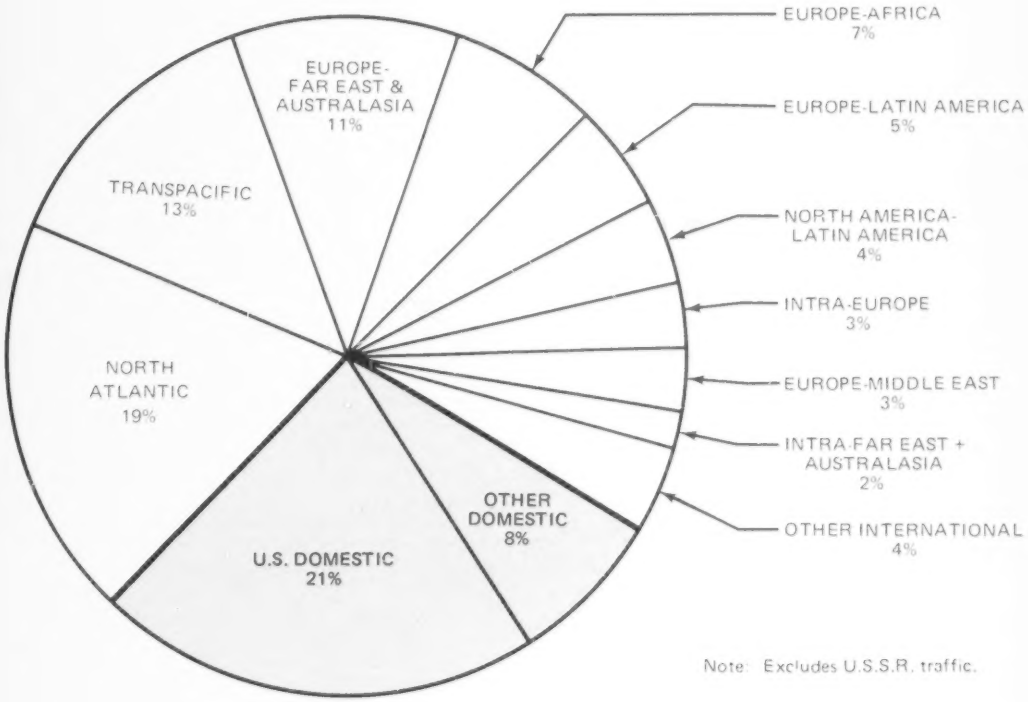
- The U.S. Domestic and North Atlantic scheduled air freight markets are the most mature of the leading markets. During the 1970s, they expanded at annual rates below the world average.
- The Transpacific market experienced exceptional growth through 1973 but growth has eased in recent years as the market matures.
- Europe-Far East/Australasia scheduled air freight has displayed steady, strong growth for many years and remains one of the more attractive markets for new service.

World Scheduled Air Freight Growth

(Excludes Mail)



1978 Scheduled Air Freight Breakdown by Market



Note: Excludes U.S.S.R. traffic.

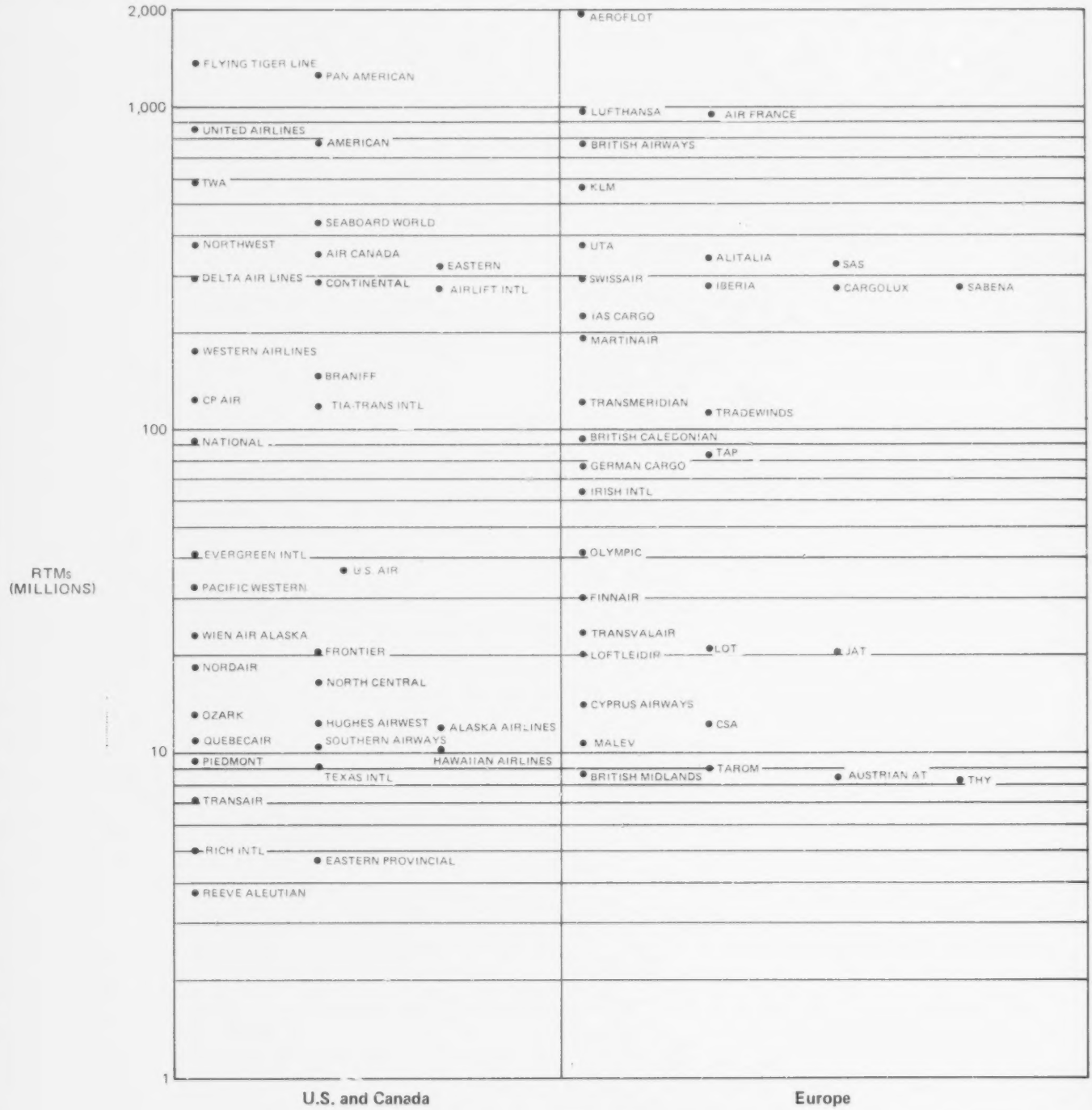
Total Market: 16.4 Billion RTMs

- Statistics compiled from IATA, ICAO, and the U.S. CAB provide a comprehensive picture of worldwide routes for scheduled air freight, which accounts for 78% of total world air cargo, excluding U.S.S.R. traffic.
- Domestic markets accounted for 29% of world scheduled air freight RTMs, with the U.S. market by far the largest.
- International scheduled markets are dominated by the North Atlantic and Transpacific routes, with Europe-Far East/Australasia a strong third. Inclusion of charter traffic would increase the share of this market of the world total, and the same would be true of the Europe-Africa market.

World Cargo Traffic

Revenue Ton-Miles for Airlines of the World—1978

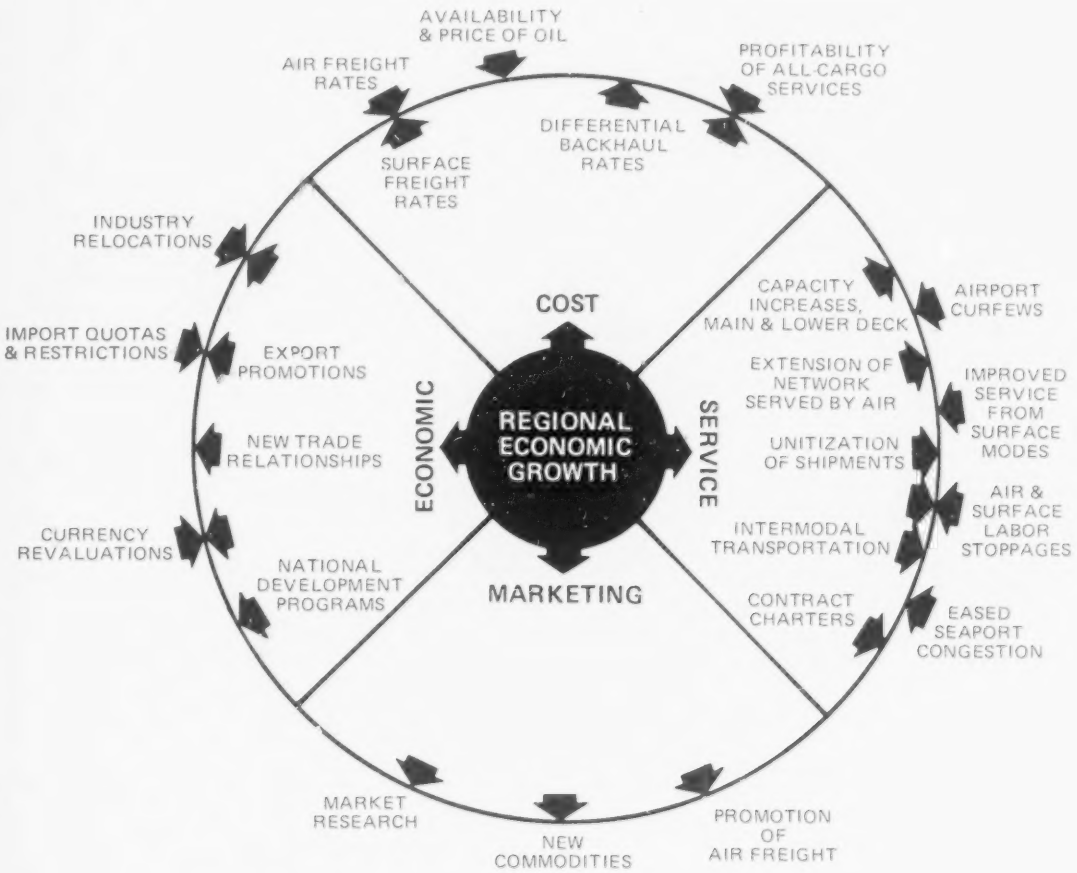
(Grouped by Region of Airline Domicile)



2,000
1,000
100
10
1
RTMs (MILLIONS)
VARIG
AVIANCA
AEROLINEAS ARGENTINAS
VIASA
LAN-CHILE
TA RIOPLANTENSE
VASP
AEROCONDOR
AEROMEXICO
MEXICANA
TRANSBRAZIL
LAB BOLIVIA
TACA
AT ENTRE RIOS
FAUCETT
LACSA
DOMINICANA
CRUZERIO
AEROPERU
BWIA
AIR JAMAICA
CUBANA
AUSTRAL
SAM COLUMBIA
ECUATORIANA
AVIATECA
TMA
EL AL
SOUTH AFRICAN
AIR AFRIQUE
SAUDIA
IRANAIR
ALIA
ETHIOPIAN AIRLINES
KUWAIT AIRWAYS
IRAQI AIRWAYS
MEA/AIR LIBAN
GULF AIR
ZAMBIA AIRWAYS
AIR ZAIRE
ROYAL AIR MAROC
EGYPTAIR
KENYA AIRWAYS
TUNIS AIR
SYRIAN ARAB
SUDAN AIRWAYS
AIR ALGERIE
AIR TANZANIA
LIBYAN ARAB AIRLINES
AIR MADAGASCAR
CAMEROON
AIR MALAWI
DETA
NIGERIA AIRWAYS
GHANA AIRWAYS
JAPAN AIR LINES
KOREAN AIRLINES
SIA/SINGAPORE
QANTAS
AIR INDIA
CHINA AIRLINES
PAKISTAN INTL
CATHAY PACIFIC
AIR NEW ZEALAND
THAI INTL
PHILIPPINE AIRLINES
ALL NIPPON AIRWAYS
MAS/MALAYSIA
ANSETT OF AUSTRALIA
GARUDA
TAA
INDIAN AIRLINES
JAPAN ASIA AIRWAYS
NW ZEALAND NATIONAL
BANGLADESH BMN
ARIANA
Central and South America
Middle East and Africa
Australia, New Zealand, and Far East

Forces and Constraints on Air Freight Growth

The factors which expand and contract the development of air freight in any specific market appear below. They are grouped into four categories: economic, cost, service, and marketing.



Scenario for Forces and Constraints on World Air Freight Over the Next Decade

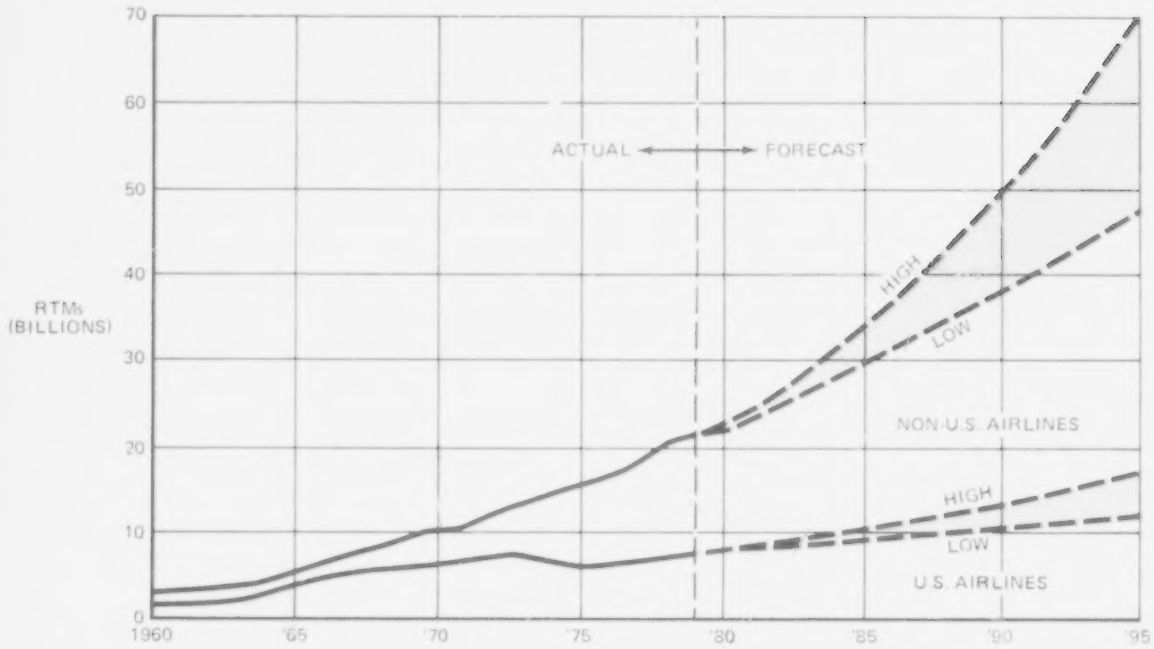
Each factor is classified according to its expected impact on world air freight in the next decade, compared to its impact during the past 10 years.

	GREATER GROWTH IMPACT OR LESS CONSTRAINT	ABOUT THE SAME EFFECT AS IN THE PAST	LESS GROWTH IMPACT OR GREATER CONSTRAINT
ECONOMIC	NEW TRADE RELATIONSHIPS	CURRENCY FLUCTUATIONS INDUSTRIAL RELOCATIONS	WORLD ECONOMIC GROWTH NATIONAL DEVELOPMENT PROGRAMS IMPORT QUOTAS AND TARIFFS
COST	UNITIZATION AND CONTAINERIZATION OF AIR FREIGHT DIFFERENTIAL BACKHAUL RATES IN IMBALANCED MARKETS		PRICE AND AVAILABILITY OF FUEL FLEET MODERNIZATION COSTS NOISE REGULATION COMPLIANCE COSTS
SERVICE	DOOR-TO-DOOR EXPRESS SMALL PACKAGE SERVICE INTERMODAL TRANSPORTATION CONTRACT CHARTERS	EXPANSION OF WORLD AIR FREIGHT NETWORK INCREASED WIDE BODY CAPACITY AIR AND SURFACE LABOR STOPPAGES	COMPETITION FROM SURFACE MODES AIRPORT CURFEWS EASED SEAPORT CONGESTION
MARKETING	MARKET RESEARCH MARKETING AND PROMOTING THE AIR MODE	NEW COMMODITIES	

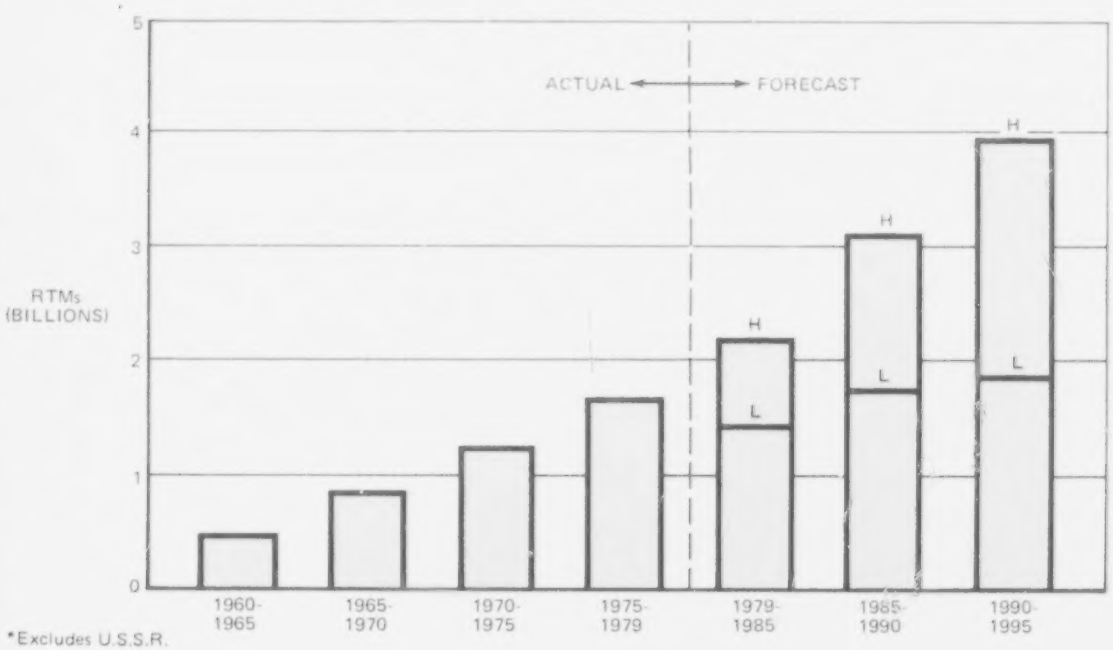
World Cargo Traffic

World* Air Cargo History and Forecast

(Scheduled and Charter Freight Plus Mail)



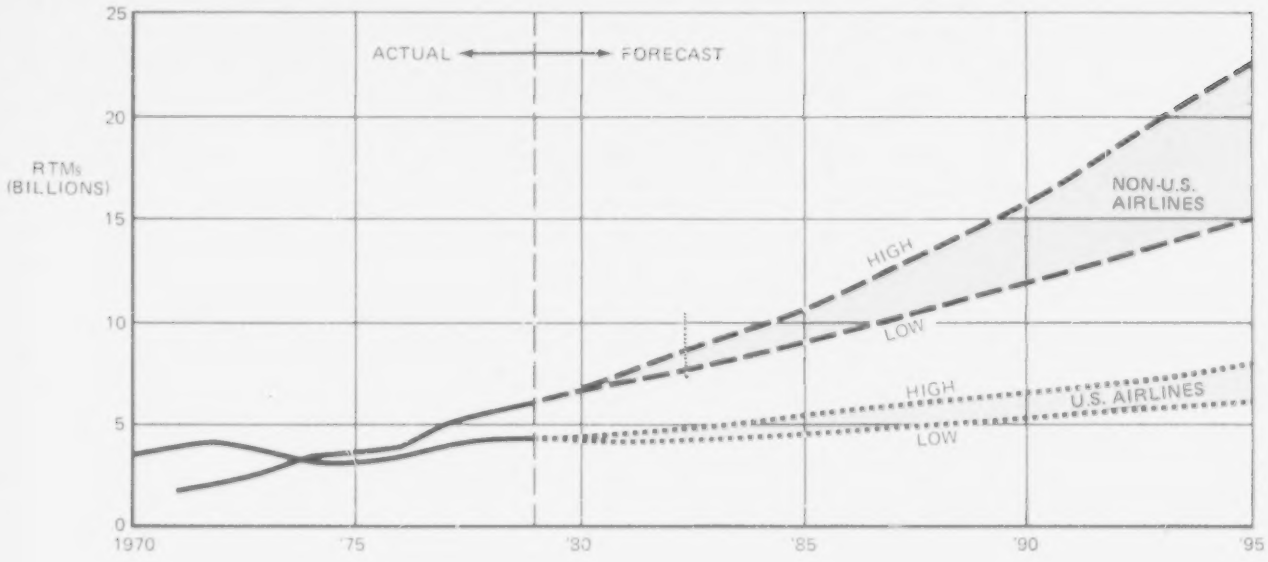
World* Air Cargo Average Annual RTM Increments



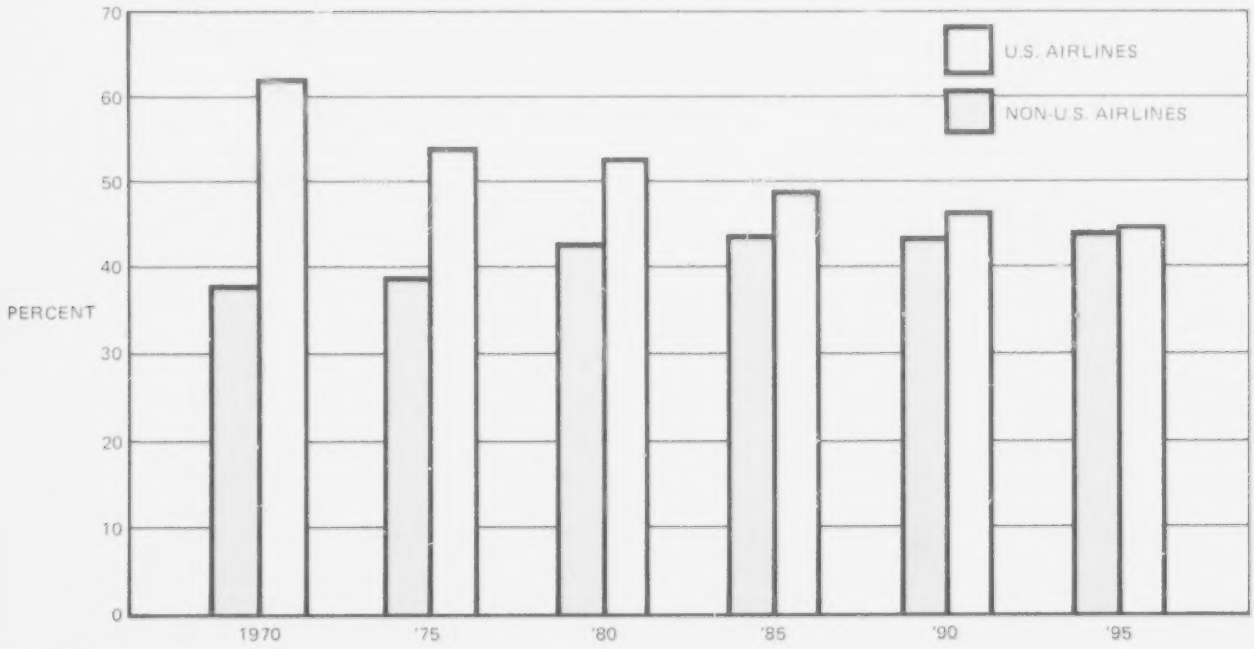
*Excludes U.S.S.R.

World Freighter Service RTMs

(Scheduled and Charter Freight Plus Mail)



Freighter Service RTMs as a Percent of Total Cargo RTMs



Note: Excludes U.S.S.R.

World Cargo Traffic

History and Forecast of Cargo RTMs for World Airlines

(Millions)

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977
U.S. CARRIERS										
FREIGHT	1000.8	2566.6	4275.8	5144.7	5657.7	5683.3	5684.1	5946.7	6780.5	8144.9
MAIL	249.6	494.4	1402.6	1322.1	1196.4	1284.4	1141.8	1108.8	1124.7	1158.1
TOTAL	1250.4	3061.1	5732.4	6466.7	6853.1	6966.6	6825.9	6955.4	7904.2	9303.0
NON-U.S. CARRIERS (ICAO PLUS TAIWAN)										
FREIGHT	695.5	1467.5	3656.2	4490.5	5474.2	6817.5	7837.9	8431.7	9755.8	11385.0
MAIL	170.0	262.6	406.9	423.8	456.1	480.5	522.1	569.1	620.6	673.4
TOTAL	865.5	1730.1	4063.1	5004.5	5833.3	7298.2	8360.0	9000.4	10414.7	11958.4
U.S. & NON-U.S. CARRIERS										
FREIGHT	1696.3	4034.1	7896.0	9715.1	11131.9	12501.1	13521.6	13880.0	15534.3	17429.9
MAIL	419.6	757.1	1809.5	1745.9	1652.5	1696.7	1678.9	1668.5	1744.6	1831.7
TOTAL	2115.9	4791.2	9705.5	11460.9	12760.4	14197.8	15240.8	15548.8	17319.0	19261.4
ALL-CARGO SERVICE	Not Available			5938.8	6467.5	6805.4	7192.2	6949.2	7570.1	9044.1
COMBINATION SERVICE				5522.1	6292.8	7388.2	8048.1	8550.6	9748.5	10217.3
U.S.S.R.	385.5	916.1	1285.4	1421.4	1472.8	1610.3	1695.8	1767.6	1848.8	1910.8
TOTAL WORLD	2501.4	5707.3	11080.9	12882.3	14233.2	15808.1	16936.6	17317.4	19167.8	21172.2

History and Forecast of Cargo RTMs for World Airlines

(Percent)

	1960 -65	1965 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78
U.S. CARRIERS										
FREIGHT	20.7	10.5	21.1	10.2	9.5	0.5	-4.1	4.1	6.8	7.2
MAIL	14.8	24.2	-11.4	-9.3	-9.5	4.1	-4.3	1.5	5.1	2.0
TOTAL	19.6	13.4	12.6	6.2	6.5	-0.7	-4.2	5.3	5.8	6.4
NON-U.S. CARRIERS (ICAO PLUS TAIWAN)										
FREIGHT	16.1	20.0	25.4	19.5	24.5	15.5	7.0	15.2	15.2	10.8
MAIL	9.1	9.2	4.2	8.3	6.8	6.4	7.7	10.5	8.5	10.1
TOTAL	14.9	18.8	23.2	19.4	21.2	14.6	7.1	15.8	14.8	10.7
U.S. & NON-U.S. CARRIERS										
FREIGHT	18.8	14.4	23.0	14.6	12.3	8.6	2.4	12.2	11.0	8.5
MAIL	12.5	20.2	-3.1	-5.0	2.7	-1.1	-0.6	4.5	5.0	5.0
TOTAL	17.8	15.4	17.0	11.6	11.0	7.3	2.0	11.4	11.2	9.1
ALL-CARGO SERVICE	Not Available			9.4	4.9	5.6	-2.7	8.3	19.4	9.6
COMBINATION SERVICE				14.0	17.4	8.6	6.2	13.6	4.9	8.7
U.S.S.R.	18.8	7.0	10.6	3.6	0.3	5.3	4.2	4.5	5.4	1.9
TOTAL WORLD	17.9	14.2	16.3	10.7	10.8	7.1	2.3	10.7	10.5	9.4

Note: Weighted average total

1978	EST. 1979	LOW 1980	HIGH 1980	LOW 1985	HIGH 1985	LOW 1990	HIGH 1990	LOW 1995	HIGH 1995	
										U.S. CARRIERS
6586.0	6715.1	6699.0	7029.0	8152.0	9390.0	9674.0	12251.0	11365.0	15566.0	FREIGHT
1181.4	1218.4	1233.0	1251.0	1358.0	1445.0	1465.0	1640.0	1560.0	1815.0	MAIL
7767.4	7933.5	7932.0	8280.0	9510.0	10835.0	11139.0	13891.0	12925.0	17381.0	TOTAL
										NON-U.S. CARRIERS (ICAO PLUS TAIWAN)
12501.7	13457.5	14330.0	14610.0	19840.0	23375.0	26375.0	35510.0	33455.0	51565.0	FREIGHT
741.4	786.0	833.0	850.0	1065.0	1195.0	1295.0	1600.0	1575.0	2045.0	MAIL
13243.1	14243.5	15172.0	15460.0	20905.0	24570.0	27670.0	37110.0	35030.0	53610.0	TOTAL
										U.S. & NON-U.S. CARRIERS
19087.7	20172.6	21038.0	21639.0	27992.0	32765.0	36049.0	47761.0	44820.0	67131.0	FREIGHT
1922.8	2004.4	2066.0	2101.0	2423.0	2640.0	2760.0	3240.0	3135.0	3860.0	MAIL
21010.5	22177.0	23104.0	23740.0	30415.0	35405.0	38809.0	51001.0	47955.0	70991.0	TOTAL
9908.8	10344.9	10739.0	11013.0	13930.0	16093.0	17321.0	22487.0	21088.0	30648.0	ALL-CARGO SERVICE
11101.7	11832.1	12365.0	12727.0	16485.0	19512.0	21488.0	28504.0	26867.0	40343.0	COMBINATION SERVICE
1944.4	2018.5	2130.0	2130.0	2570.0	2570.0	3065.0	3065.0	3615.0	3615.0	U.S.S.R.
22954.9	24196.3	25234.0	25870.0	32985.0	37975.0	41874.0	54066.0	51570.0	74606.0	TOTAL WORLD

1978 -79	LOW 1979 -80	HIGH 1979 -80	LOW 1980 -85	HIGH 1980 -85	LOW 1985 -90	HIGH 1985 -90	LOW 1990 -95	HIGH 1990 -95	
									U.S. CARRIERS
2.0	-0.2	4.7	4.0	6.0	3.5	5.5	3.3	4.9	FREIGHT
3.1	1.2	2.7	2.0	2.9	1.5	2.6	1.3	2.0	MAIL
2.1	-0.0	4.4	3.7	5.5	3.2	5.1	3.0	4.6	TOTAL
									NON-U.S. CARRIERS (ICAO PLUS TAIWAN)
7.5	6.6	8.6	6.7	9.9	5.9	8.7	4.9	7.7	FREIGHT
6.0	6.0	8.1	5.0	7.1	4.0	6.0	4.0	5.0	MAIL
7.5	6.5	8.5	6.6	9.7	5.8	8.6	4.8	7.6	TOTAL
									U.S. & NON-U.S. CARRIERS
5.7	4.3	7.3	5.9	8.7	5.2	7.8	4.5	7.0	FREIGHT
4.2	3.1	4.8	3.2	4.7	2.6	4.2	2.6	3.6	MAIL
5.6	4.2	7.0	5.7	8.3	5.0	7.6	4.3	6.8	TOTAL
4.4	3.8	6.5	5.3	7.9	4.5	6.9	4.0	6.4	ALL-CARGO SERVICE
6.6	4.5	7.6	5.9	8.7	5.4	8.1	4.6	7.2	COMBINATION SERVICE
5.8	5.5	5.5	3.8	3.8	3.6	3.6	3.4	3.4	U.S.S.R.
5.4	4.3	6.9	5.5	8.0	4.9	7.3	4.3	6.7	TOTAL WORLD

World Cargo Traffic

History and Forecast of Cargo RTMs for U.S. Airlines

(Millions)

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977
U.S. DOMESTIC										
SCHEDULED FREIGHT & EXPRESS										
TRUNKS & PAA	376.4	918.5	1872.3	1933.8	2144.2	2350.1	2318.2	2230.9	2371.7	2596.0
ALL CARGO	89.6	168.8	249.6	264.9	326.7	468.1	466.2	415.7	434.4	494.6
OTHER DOMESTIC	10.5	27.6	76.1	76.5	94.5	100.9	104.4	98.1	101.8	103.9
TOTAL	476.5	1114.8	2201.0	2274.4	2565.4	2919.1	2888.8	2744.8	2907.9	3123.5
NON-SCHEDULED FREIGHT										
TRUNKS & PAA	0.2	50.5	20.1	117.7	180.6	15.6	7.8	6.4	8.1	19.2
ALL CARGO & SUPPLEMENTAL	249.7	495.5	327.6	540.7	301.1	428.7	322.1	293.2	255.2	260.3
OTHER DOMESTIC	2.8	3.5	16.4	10.4	8.3	0.2	0.8	1.7	9.1	26.4
TOTAL	347.2	549.5	367.7	668.4	418.0	544.5	330.6	301.3	272.6	305.9
MAIL										
TRUNKS & PAA	150.6	215.5	468.0	495.0	568.7	612.5	621.3	618.9	656.5	684.9
ALL CARGO	0.2	2.3	9.1	10.9	9.5	24.4	24.4	13.8	10.4	12.2
OTHER DOMESTIC	5.8	10.5	32.7	45.6	36.0	41.2	44.1	44.2	49.6	53.0
TOTAL	156.6	228.3	704.8	705.4	684.2	684.0	689.8	680.9	716.4	750.1
TOTAL U.S. DOMESTIC	980.4	1892.7	3269.5	3648.2	3669.6	4047.5	4007.3	3727.0	3896.9	4179.5
U.S. INTERNATIONAL										
SCHEDULED FREIGHT										
TRUNKS & PAA	191.6	496.3	945.6	1008.8	1113.3	1238.3	1339.0	1255.4	1380.6	1467.8
ALL CARGO	34.9	110.9	356.6	507.3	634.0	677.1	736.9	780.0	805.8	834.1
TOTAL	226.4	787.2	1267.2	1516.1	1747.3	1915.4	2075.9	2049.4	2186.4	2301.9
NON-SCHEDULED FREIGHT										
TRUNKS & PAA	24.7	48.8	109.6	150.2	322.1	180.1	137.6	117.4	91.3	66.1
ALL CARGO & SUPPLEMENTAL	26.0	149.2	268.3	524.7	622.9	625.9	253.2	237.7	322.3	344.4
TOTAL	50.7	198.0	377.9	674.9	945.0	806.2	390.8	355.1	413.6	413.5
MAIL										
TRUNKS & PAA	103.3	244.0	571.1	456.4	371.6	361.4	347.8	311.7	291.7	299.0
ALL CARGO	9.4	11.2	216.7	160.3	143.6	160.9	119.2	114.2	115.7	109.2
TOTAL	112.8	268.2	787.8	616.7	515.2	522.4	467.0	425.9	407.4	408.1
TOTAL U.S. INTERNATIONAL	389.9	1171.4	2462.9	3008.2	3197.5	3244.0	2933.6	2829.5	3007.4	3123.5
TOTAL U.S. DOMESTIC & INTERNATIONAL										
SCHEDULED FREIGHT & EXPRESS	702.9	1819.2	3498.2	3791.0	4302.7	4834.4	4962.7	4793.3	5094.3	5425.4
NON-SCHEDULED FREIGHT	297.8	747.5	741.6	1343.1	1355.0	849.7	721.4	656.4	686.2	719.4
MAIL	269.6	496.4	1492.6	1322.1	1199.4	1206.4	1156.8	1106.8	1123.7	1158.3
TOTAL	1250.4	3061.1	5732.4	6456.1	6857.1	6889.6	6840.9	6556.4	6904.2	7303.0
ALL-CARGO SERVICES	0.0	1726.0	3563.8	4048.7	4221.2	4861.5	4780.4	4643.7	4620.4	4950.5
COMBINATION SERVICES	1250.4	1335.1	2168.6	2407.4	2635.9	2027.7	3051.5	3012.7	3274.6	3472.5

BOEING

1978	EST. 1979	LOW 1980	HIGH 1980	LOW 1985	HIGH 1985	LOW 1990	HIGH 1990	LOW 1995	HIGH 1995	
										U.S. DOMESTIC
2575.2	2447.4									SCHEDULED FREIGHT & EXPRESS
814.8	937.1									TRUNKS & PAA
114.3	113.2									ALL CARGO
										OTHER DOMESTIC
3505.3	3497.7	3430.0	3600.0	4125.0	4760.0	4900.0	6220.0	5750.0	7940.0	TOTAL
22.2	16.3									NON-SCHEDULED FREIGHT
287.8	267.8									TRUNKS & PAA
8.1	51.2									ALL CARGO & SUPPLEMENTAL
										OTHER DOMESTIC
318.1	335.3	294.0	334.0	301.0	375.0	309.0	425.0	320.0	490.0	TOTAL
720.3	748.2									MAIL
28.5	23.8									TRUNKS & PAA
59.2	63.1									ALL CARGO
										OTHER DOMESTIC
807.5	845.1	860.0	875.0	950.0	1015.0	1025.0	1150.0	1090.0	1270.0	TOTAL
4630.9	4679.1	4584.0	4809.0	5376.0	6150.0	6234.0	7795.0	7160.0	9700.0	TOTAL U.S. DOMESTIC
										U.S. INTERNATIONAL
1488.0	1667.5									SCHEDULED FREIGHT
825.3	808.0									TRUNKS & PAA
										ALL CARGO
2314.2	2475.5	2585.0	2660.0	3300.0	3730.0	4015.0	4990.0	4825.0	6445.0	TOTAL
46.9	14.7									NON-SCHEDULED FREIGHT
401.5	391.9									TRUNKS & PAA
										ALL CARGO & SUPPLEMENTAL
448.4	406.6	390.0	435.0	426.0	525.0	450.0	616.0	470.0	691.0	TOTAL
282.4	305.0									MAIL
91.5	67.3									TRUNKS & PAA
										ALL CARGO
373.9	372.3	373.0	376.0	408.0	430.0	440.0	490.0	470.0	545.0	TOTAL
3136.5	3254.4	3348.0	3471.0	4134.0	4685.0	4905.0	6096.0	5765.0	7681.0	TOTAL U.S. INTERNATIONAL
										TOTAL U.S. DOMESTIC & INTERNATIONAL
5819.5	5973.2	6015.0	6260.0	7425.0	8490.0	8915.0	11210.0	10575.0	14385.0	SCHEDULED FREIGHT & EXPRESS
766.5	741.9	684.0	769.0	727.0	900.0	759.0	1041.0	790.0	1181.0	NON-SCHEDULED FREIGHT
1181.4	1218.4	1233.0	1251.0	1358.0	1445.0	1465.0	1640.0	1560.0	1815.0	MAIL
7767.4	7933.5	7932.0	8280.0	9510.0	10835.0	11139.0	13891.0	12925.0	17381.0	TOTAL
4242.9	4266.3	4234.0	4384.0	4839.0	5313.0	5378.0	6450.0	6081.0	7789.0	ALL-CARGO SERVICES
3524.5	3667.2	3698.0	3896.0	4671.0	5522.0	5761.0	7441.0	6844.0	9592.0	COMBINATION SERVICES

World Cargo Traffic

History and Forecast of Cargo RTMs for U.S. Airlines

(Percent)

	1960 -65	1965 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78
U.S. DOMESTIC										
SCHEDULED FREIGHT & EXPRESS										
TRUNKS & PAA	19.5	15.4	3.2	10.9	6.6	-1.4	-4.7	6.8	6.9	1.6
ALL CARGO	13.5	8.1	6.1	24.3	4[illegible].3	-6.4	-10.8	4.5	11.3	68.5
OTHER DOMESTIC	21.2	25.5	-4.3	25.5	6.9	3.5	-5.9	5.6	2.1	10.0
TOTAL	18.5	14.5	3.3	12.8	13.9	-1.1	-4.9	5.9	7.4	12.2
NON-SCHEDULED FREIGHT										
TRUNKS & PAA	194.0	-16.7	477.8	-16.3	-84.5	-50.4	-17.5	30.5	130.1	15.7
ALL CARGO & SUPPLEMENTAL	15.2	-7.9	5.6	-11.4	9.2	-2.0	-6.0	-15.0	2.0	10.6
OTHER DOMESTIC	8.8	34.5	-32.9	-20.2	-97.6	300.0	112.5	433.3	166.1	-69.3
TOTAL	17.3	-7.9	28.8	-12.5	-16.0	-4.0	-8.6	-9.5	12.2	4.0
MAIL										
TRUNKS & PAA	10.5	25.7	-0.6	-3.5	-3.7	1.4	-0.4	6.1	4.3	5.2
ALL CARGO	20.0	32.2	39.1	-11.7	197.4	-13.9	-27.1	-38.8	12.3	133.0
OTHER DOMESTIC	15.8	25.6	8.9	9.6	10.8	2.1	0.2	10.9	8.2	10.8
TOTAL	10.9	25.3	0.1	-3.0	-0.0	0.8	-1.3	5.2	4.7	7.6
TOTAL U.S. DOMESTIC	17.0	11.6	6.5	6.1	7.9	-1.0	-4.6	4.6	7.3	10.8
U.S. INTERNATIONAL										
SCHEDULED FREIGHT										
TRUNKS & PAA	25.5	9.5	7.3	10.4	11.2	8.1	-5.9	6.6	6.3	1.4
ALL CARGO	26.0	26.3	43.4	22.9	8.5	8.8	7.1	2.1	5.5	-1.1
TOTAL	25.6	12.5	16.9	14.6	10.2	8.4	-1.3	6.7	5.3	0.5
NON-SCHEDULED FREIGHT										
TRUNKS & PAA	14.6	17.6	219.5	-8.0	-43.0	-23.8	-14.7	-22.7	-24.4	-32.1
ALL CARGO & SUPPLEMENTAL	41.8	12.5	95.6	18.7	-48.0	-21.8	-6.1	35.6	6.9	16.6
TOTAL	31.3	13.8	131.5	8.0	-46.6	-22.5	-9.1	16.5	-0.0	8.4
MAIL										
TRUNKS & PAA	19.8	17.5	-20.1	-18.6	-2.7	-3.8	-10.4	-6.4	2.5	-5.5
ALL CARGO	3.4	81.0	-26.0	-10.4	12.1	-25.9	-4.2	1.3	-5.6	-16.2
TOTAL	18.7	24.2	-21.7	-15.5	1.4	-10.6	-8.8	-4.4	0.2	-8.4
TOTAL U.S. INTERNATIONAL	24.6	16.0	22.1	6.3	-8.0	-0.5	-5.6	6.3	5.9	0.4
TOTAL U.S. DOMESTIC & INTERNATIONAL										
SCHEDULED FREIGHT & EXPRESS	20.9	14.0	8.4	13.5	12.4	2.7	-3.4	6.3	6.5	7.3
NON-SCHEDULED FREIGHT	20.2	-0.2	81.1	0.9	-37.4	-15.0	-9.0	4.5	4.8	6.6
MAIL	14.6	24.7	-11.4	-9.3	0.6	-4.1	-4.3	1.5	3.1	2.0
TOTAL	19.6	13.4	12.6	6.2	0.5	-0.7	-4.2	5.3	5.8	6.4
ALL-CARGO SERVICES	0.0	15.6	13.6	4.3	-6.1	-4.4	-6.5	2.4	5.5	10.8
COMBINATION SERVICES	1.3	10.2	11.0	9.5	11.1	4.2	-1.3	8.7	6.0	1.5

Note: Weighted average total

1978 -79	LOW 1979 -80	HIGH 1979 -80	LOW 1980 -85	HIGH 1980 -85	LOW 1985 -90	HIGH 1985 -90	LOW 1990 -95	HIGH 1990 -95	
									U.S. DOMESTIC
									SCHEDULED FREIGHT & EXPRESS
-5.0									TRUNKS & PAA
15.0									ALL CARGO
-1.0									OTHER DOMESTIC
-0.2	-1.9	2.9	3.8	5.7	3.5	5.5	3.3	5.0	TOTAL
									NON-SCHEDULED FREIGHT
-26.6									TRUNKS & PAA
-6.9									ALL CARGO & SUPPLEMENTAL
582.1									OTHER DOMESTIC
5.4	-12.3	-0.4	0.5	2.3	0.5	2.5	0.7	2.9	TOTAL
									MAIL
5.4									TRUNKS & PAA
-16.5									ALL CARGO
7.5									OTHER DOMESTIC
4.8	1.6	3.4	2.0	3.0	1.5	2.5	1.2	2.0	TOTAL
1.0	-2.0	2.8	3.2	5.0	3.0	4.9	2.8	4.5	TOTAL U.S. DOMESTIC
									U.S. INTERNATIONAL
									SCHEDULED FREIGHT
12.0									TRUNKS & PAA
-2.1									ALL CARGO
7.0	4.4	7.5	5.0	7.0	4.0	6.0	3.7	5.3	TOTAL
									NON-SCHEDULED FREIGHT
-68.7									TRUNKS & PAA
-2.4									ALL CARGO & SUPPLEMENTAL
-9.3	-4.1	7.0	1.8	3.8	1.1	3.2	0.9	2.3	TOTAL
									MAIL
8.0									TRUNKS & PAA
-26.4									ALL CARGO
-0.4	0.2	1.0	1.8	2.7	1.5	2.6	1.3	2.2	TOTAL
3.8	2.9	6.7	4.3	6.2	3.5	5.4	3.3	4.7	TOTAL U.S. INTERNATIONAL
									TOTAL U.S. DOMESTIC & INTERNATIONAL
2.6	0.7	4.8	4.3	6.3	3.7	5.7	3.5	5.1	SCHEDULED FREIGHT & EXPRESS
-5.2	-7.8	3.7	1.2	3.2	0.9	3.0	0.8	2.6	NON-SCHEDULED FREIGHT
3.1	1.2	2.7	2.0	2.9	1.5	2.6	1.3	2.0	MAIL
2.1	-0.0	4.4	3.7	5.5	3.2	5.1	3.0	4.6	TOTAL
0.6	-0.8	2.8	2.7	3.9	2.1	4.0	2.5	3.8	ALL-CARGO SERVICES
4.0	0.8	6.2	4.8	7.2	4.3	6.1	3.5	5.2	COMBINATION SERVICES

World Cargo Traffic

History and Forecast of Cargo RTMs for Non-U.S. Airlines

(Millions)

	1960	1965	1970	1971	1972	1973	1974	1975	1976	1977
SCHEDULED SERVICES										
EUROPE										
FREIGHT	336.9	816.9	2048.0	2235.3	2624.0	3139.8	3405.4	3429.2	3956.5	4568.1
MAIL	101.1	146.8	235.2	237.1	257.1	276.0	289.5	311.7	339.5	366.3
TOTAL	438.0	963.7	2283.2	2472.4	2881.1	3415.8	3784.9	3740.9	4296.0	4937.4
AFRICA										
FREIGHT	27.4	78.5	164.1	188.4	202.6	260.4	308.7	326.2	365.6	427.8
MAIL	10.3	14.8	21.4	22.2	21.6	21.3	22.1	24.0	25.0	31.4
TOTAL	37.7	93.4	185.5	210.6	224.2	271.7	330.8	350.2	381.5	459.2
MIDDLE EAST										
FREIGHT	76.8	51.9	188.0	244.6	295.9	405.2	453.7	522.9	614.4	714.8
MAIL	2.2	4.0	5.8	6.2	6.8	7.9	10.1	11.6	14.5	16.6
TOTAL	79.0	55.8	193.8	250.8	302.7	413.1	463.8	534.5	628.9	731.4
ASIA & PACIFIC										
FREIGHT	122.3	249.3	645.5	766.3	866.4	1206.0	1444.4	1795.0	2121.6	2395.3
MAIL	31.7	61.3	85.3	87.9	98.7	102.0	110.4	124.3	134.0	142.1
TOTAL	154.0	310.7	730.9	854.2	965.1	1309.0	1554.8	1919.3	2255.6	2537.4
WESTERN HEMISPHERE										
FREIGHT	182.1	270.9	610.6	667.3	770.3	874.8	1016.6	1035.8	1130.9	1274.8
MAIL	24.7	35.7	59.2	70.4	74.9	83.1	90.0	90.5	107.0	114.0
TOTAL	206.8	306.6	669.8	737.7	845.2	957.9	1106.6	1130.3	1237.9	1388.8
NON-U.S. WORLD SCHEDULED SERVICES										
FREIGHT	695.5	1467.5	3656.2	4101.9	4787.2	5876.2	6718.8	7113.1	8179.0	9330.8
MAIL	170.0	262.6	406.9	423.8	459.1	490.3	522.1	562.1	628.9	671.4
TOTAL	865.5	1730.1	4063.1	4525.7	5246.3	6366.5	7240.9	7675.2	8799.9	10002.2
CHARTER SERVICES	0.0	0.0	0.0	478.9	687.0	941.7	1155.0	1319.2	1614.8	1956.2
NON-U.S. WORLD TOTAL SERVICES	865.5	1730.1	4063.1	5004.6	5933.3	7308.2	8369.9	8993.4	10414.7	11958.4
ALL-CARGO SERVICES	0.0	0.0	0.0	1890.1	2276.3	2847.7	3402.8	3655.5	3949.5	5213.6
COMBINATION SERVICES	865.5	1730.1	4063.1	3114.5	3657.0	4460.5	4967.1	5337.9	6465.2	6744.8
U.S.S.R.										
FREIGHT	0.0	0.0	0.0	1181.6	1226.2	1335.5	1401.8	1440.3	1518.4	1561.6
MAIL	0.0	0.0	0.0	239.8	246.6	274.8	293.8	319.3	329.6	349.2
TOTAL	385.5	916.1	1285.4	1421.4	1472.8	1610.3	1695.6	1767.6	1848.0	1910.8
WORLD NON-U.S. TOTAL	1251.0	2646.2	5348.5	6426.0	7406.1	8918.5	10065.5	10761.0	12262.7	13869.2

1978	EST. 1979	LOW 1980	HIGH 1980	LOW 1985	HIGH 1985	LOW 1990	HIGH 1990	LOW 1995	HIGH 1995	
										SCHEDULED SERVICES
										EUROPE
5023.0	5399.7	5697.0	5804.0	7614.0	8909.0	9893.0	13308.0	12276.0	19011.0	FREIGHT
409.7	433.0	458.0	467.0	584.0	656.0	710.0	877.0	863.0	1121.0	MAIL
5432.7	5832.7	6155.0	6271.0	8198.0	9565.0	10603.0	14185.0	13139.0	20132.0	TOTAL
										AFRICA
436.7	467.3	500.0	510.0	667.0	781.0	916.0	1232.0	1198.0	1856.0	FREIGHT
31.8	34.0	36.0	37.0	46.0	51.0	56.0	69.0	68.0	88.0	MAIL
468.5	501.3	536.0	547.0	713.0	832.0	972.0	1301.0	1266.0	1944.0	TOTAL
										MIDDLE EAST
762.0	807.7	866.0	883.0	1215.0	1421.0	1649.0	2218.0	2134.0	3304.0	FREIGHT
18.1	20.0	22.0	22.0	31.0	35.0	39.0	48.0	47.0	61.0	MAIL
780.1	827.7	888.0	905.0	1246.0	1456.0	1688.0	2266.0	2181.0	3365.0	TOTAL
										ASIA & PACIFIC
2912.9	3233.3	3575.0	3642.0	5578.0	6527.0	7717.0	10381.0	10114.0	15662.0	FREIGHT
156.4	166.0	177.0	180.0	224.0	252.0	273.0	337.0	332.0	431.0	MAIL
3069.3	3399.3	3752.0	3822.0	5802.0	6779.0	7990.0	10718.0	10446.0	16093.0	TOTAL
										WESTERN HEMISPHERE
1408.4	1462.9	1562.0	1591.0	2036.0	2382.0	2725.0	3666.0	3508.0	5432.0	FREIGHT
125.4	133.0	140.0	144.0	180.0	201.0	217.0	269.0	265.0	344.0	MAIL
1533.8	1625.9	1702.0	1735.0	2216.0	2583.0	2942.0	3935.0	3773.0	5776.0	TOTAL
										NON-U.S. WORLD
										SCHEDULED SERVICES
10543.0	11400.9	12200.0	12430.0	17110.0	20020.0	22900.0	30805.0	29230.0	45265.0	FREIGHT
741.4	786.0	833.0	850.0	1065.0	1195.0	1295.0	1600.0	1575.0	2045.0	MAIL
11284.4	12186.9	13033.0	13280.0	18175.0	21215.0	24195.0	32405.0	30805.0	47310.0	TOTAL
1958.7	2056.6	2139.0	2180.0	2730.0	3355.0	3475.0	4705.0	4225.0	6300.0	CHARTER SERVICES
13243.1	14243.5	15172.0	15460.0	20905.0	24570.0	27670.0	37110.0	35030.0	53610.0	NON-U.S. WORLD TOTAL SERVICES
5665.9	6078.6	6505.0	6629.0	9091.0	10780.0	11943.0	16047.0	15007.0	22859.0	ALL-CARGO SERVICES
7577.2	8164.9	8667.0	8831.0	11814.0	13790.0	15727.0	21063.0	20023.0	30751.0	COMBINATION SERVICES
										U.S.S.R.
1593.2	1650.4	1744.0	1744.0	2095.0	2095.0	2485.0	2485.0	2915.0	2915.0	FREIGHT
351.2	367.9	386.0	386.0	475.0	475.0	580.0	580.0	700.0	700.0	MAIL
1944.4	2018.3	2130.0	2130.0	2570.0	2570.0	3065.0	3065.0	3615.0	3615.0	TOTAL
15187.5	16261.8	17302.0	17590.0	23475.0	27140.0	30735.0	40175.0	38645.0	57225.0	WORLD NON-U.S. TOTAL

World Cargo Traffic

History and Forecast of Cargo RTMs for Non-U.S. Airlines

(Percent)

	1960 -65	1965 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78
SCHEDULED SERVICES										
EUROPE										
FREIGHT	19.4	20.2	9.1	17.4	19.7	11.3	-1.9	15.4	15.5	10.0
MAIL	7.7	9.9	8.8	8.4	7.4	4.9	7.7	8.9	8.8	10.9
TOTAL	17.1	18.8	8.9	16.5	18.6	10.9	-1.2	14.8	14.9	10.0
AFRICA										
FREIGHT	23.4	15.9	14.8	7.5	23.6	23.3	5.7	9.0	6.2	15.6
MAIL	7.6	7.6	5.7	-2.7	-1.4	5.8	8.6	7.5	21.2	1.8
TOTAL	19.6	14.7	13.5	6.5	21.2	21.8	5.9	8.9	7.3	14.5
MIDDLE EAST										
FREIGHT	14.1	29.4	30.1	20.2	37.9	12.0	15.5	17.5	16.3	6.6
MAIL	12.5	7.0	6.0	9.7	16.2	27.8	14.0	23.0	14.5	4.0
TOTAL	14.0	28.3	29.4	19.9	37.4	12.9	15.2	17.7	16.3	6.7
ASIA & PACIFIC										
FREIGHT	15.3	21.0	18.5	17.0	34.5	19.8	24.3	18.2	12.6	21.4
MAIL	14.1	6.8	8.0	12.3	8.9	8.2	12.6	7.8	6.0	10.1
TOTAL	15.1	19.2	15.9	16.5	31.4	18.0	23.4	17.9	12.5	21.0
WESTERN HEMISPHERE										
FREIGHT	8.3	17.7	9.5	15.4	13.6	14.2	2.3	8.8	12.7	10.5
MAIL	7.7	10.6	18.9	6.4	10.9	9.3	8.6	18.2	6.5	10.0
TOTAL	8.2	16.9	10.1	14.6	13.3	13.5	2.1	9.5	12.2	10.4
NON-U.S. WORLD SCHEDULED SERVICES										
FREIGHT	16.1	20.0	12.2	16.7	23.7	14.3	5.9	15.0	14.1	13.0
MAIL	9.1	9.2	4.2	9.3	6.8	6.6	7.7	10.5	8.5	10.1
TOTAL	14.9	18.6	11.4	15.9	21.4	13.7	6.0	14.7	13.7	12.8
CHARTER SERVICES	0.0	0.0	0.0	43.5	31.1	23.1	13.7	22.5	21.0	0.2
NON-U.S. WORLD TOTAL SERVICES	14.9	18.6	23.2	18.6	23.2	14.9	7.1	15.8	14.8	10.7
ALL-CARGO SERVICES	0.0	0.0	0.0	20.4	25.1	16.5	1.5	14.3	32.0	8.7
COMBINATION SERVICES	14.9	18.6	-23.3	17.4	22.0	12.0	10.8	16.7	4.3	12.3
U.S.S.R.										
FREIGHT	0.0	0.0	0.0	3.8	8.9	5.0	3.4	4.8	2.8	2.0
MAIL	0.0	0.0	0.0	2.8	11.4	6.6	8.3	3.6	5.9	0.6
TOTAL	18.9	7.0	10.6	3.6	9.3	5.3	4.2	4.5	3.4	1.8
WORLD NON-U.S. TOTAL	16.2	15.1	20.1	15.3	20.4	13.2	6.6	14.0	13.1	9.5

Note: Weighted average total

1978 -79	LOW 1979 -80	HIGH 1979 -80	LOW 1980 -85	HIGH 1980 -85	LOW 1985 -90	HIGH 1985 -90	LOW 1990 -95	HIGH 1990 -95	
									SCHEDULED SERVICES
									EUROPE
7.5	5.5	7.5	6.0	8.9	5.4	8.4	4.4	7.4	FREIGHT
5.7	5.8	7.9	5.0	7.0	4.0	6.0	4.0	5.0	MAIL
7.4	5.5	7.5	5.9	8.8	5.3	8.2	4.4	7.3	TOTAL
									AFRICA
7.0	7.0	9.1	5.9	8.9	6.6	9.5	5.5	8.5	FREIGHT
6.9	5.9	8.8	5.0	6.6	4.0	6.2	4.0	5.0	MAIL
7.0	6.9	9.1	5.9	8.7	6.4	9.4	5.4	8.4	TOTAL
									MIDDLE EAST
6.0	7.2	9.3	7.8	10.0	6.3	9.3	5.3	8.3	FREIGHT
10.5	10.0	10.0	7.1	9.7	4.7	6.5	3.8	4.9	MAIL
6.1	7.3	9.3	7.0	10.0	6.3	9.2	5.3	8.2	TOTAL
									ASIA & PACIFIC
11.0	10.6	12.6	9.3	12.4	6.7	9.7	5.6	8.6	FREIGHT
6.1	6.6	8.4	4.8	7.0	4.0	6.0	4.0	5.0	MAIL
10.8	10.4	12.4	9.1	12.1	6.6	9.6	5.5	8.5	TOTAL
									WESTERN HEMISPHERE
6.0	4.6	6.6	5.4	8.4	6.0	9.0	5.2	8.2	FREIGHT
6.1	5.3	8.3	5.2	6.9	3.8	6.0	4.1	5.0	MAIL
6.0	4.7	6.7	5.4	8.3	5.8	8.8	5.1	8.0	TOTAL
									NON-U.S. WORLD SCHEDULED SERVICES
8.1	7.0	9.0	7.0	10.0	6.0	9.0	5.0	8.0	FREIGHT
6.0	6.0	8.1	5.0	7.1	4.0	6.0	4.0	5.0	MAIL
8.0	6.9	9.0	6.9	9.8	5.9	8.8	4.9	7.9	TOTAL
5.0	4.0	6.0	5.0	9.0	4.9	7.0	4.0	6.0	CHARTER SERVICES
7.6	6.5	8.5	6.6	9.7	5.8	8.6	4.8	7.6	NON-U.S. WORLD TOTAL SERVICES
7.3	7.0	9.1	6.9	10.2	5.6	8.3	4.7	7.3	ALL-CARGO SERVICES
7.8	6.1	8.2	6.4	9.3	5.9	8.8	4.9	7.9	COMBINATION SERVICES
									U.S.S.R.
3.6	5.7	5.7	3.7	3.7	3.5	3.5	3.2	3.2	FREIGHT
4.8	4.9	4.9	4.2	4.2	4.1	4.1	3.8	3.8	MAIL
3.8	5.5	5.5	3.8	3.8	3.6	3.6	3.4	3.4	TOTAL
7.1	6.4	8.2	6.3	9.1	5.5	8.2	4.7	7.3	WORLD NON-U.S. TOTAL

Passenger and Cargo Definitions

1. RPM: One revenue passenger transported one mile in revenue service.
2. RTM: One revenue ton carried one mile in revenue service.
3. Scheduled Airline Traffic: Airline flights scheduled and performed according to a published timetable and open for use by the general public.
4. Charter Airline Traffic: Airline flights performed on a non-scheduled basis.
5. Domestic Airline Traffic: A flight stage entirely contained within the domestic boundaries of a nation by an airline registered in that nation.
6. International Airline Traffic: A flight stage which begins or ends (or both) in a nation other than the nation where the airline is registered. Flight stages between a nation and its territory (U.S. to Puerto Rico) or between two territories (Midway to Guam) are international because they either cross international waters or the territory of another nation.
7. Data sources for U.S. carriers are the CAB Air Carrier Traffic Statistics for U.S. airlines, financial annual reports, and various airline association reported data.
8. International Civil Aviation Organization (ICAO), representing the world's scheduled airlines, was the primary source for non-U.S. carrier scheduled service data.
9. Passenger charter service for the scheduled carriers and all-charter carriers estimated from a variety of sources, including U.K. CAA, miscellaneous reported airline data as carried in Interavia, Flight International, and other airline news media, IATA annual report data, ECAC (European Civil Aviation Conference) reported values, Paris Airport Authority, and ICAO all-charter carrier annual reports.
10. Charter cargo for non-U.S. ICAO carriers estimated from ICAO special digest of statistics on non-scheduled air transport and ICAO traffic statistics.
11. Regionals: A combination of local service carriers and PSA, Air California, Southwest Airlines, Air Florida, intra-Alaska (including Alaska Airlines), intra-Hawaii carriers, and U.S. certificated regional carriers (Aspen, TAG, Wright).
12. Supplemental and all-cargo carriers have historically been all-charter services for passenger operations. The forecast includes scheduled service operations, but adds the scheduled and charter services together for the table to be entered under charter in the total U.S. carrier values.
13. Miscellaneous Domestic under U.S. carriers: A total of commuter carriers and helicopter carriers.
14. Data reported for the U.S. carriers for 1969 and before are reported on a 48-state basis. For 1970 and on the values are reported for 50 states.
15. For passenger traffic, the non-U.S. carrier domicile groupings defined by Boeing are not the same as ICAO for the Middle East and Africa. Boeing's definition is a political aggregation, whereas ICAO is geographically categorized.
16. No estimate has been made for the commuter air taxi services or helicopter carriers of non-U.S.
17. World: Includes airlines of ICAO-member countries, Taiwan, and all-charter carriers, but excludes U.S.S.R., People's Republic of China, East Germany, and any other airlines.
18. U.S.S.R., People's Republic of China, and other countries include estimates for the countries of Mongolia, North Korea, East Germany, Vietnam, Cambodia (Dem. Kampucha) and Laos from miscellaneous published sources.
19. World total: Combines the countries in 17 and 18.
20. The low passenger and cargo forecasts are based on the baseline economic forecast through 1990 with a judgmental extension to 1995. The high passenger forecasts represent better than normal growth unaffected by major political, economic, or environmental crisis.
21. The changing scheduled/charter interface of airline operations with the advent of low discount fares and "scheduled charters" is diluting the historical significance of charter vs. scheduled statistics. The values presented herein are organized per historical standards. However, the standard is rapidly changing and charter values at some future year could be redefined as low discount fare travel.
22. Cargo: Freight plus mail.

Commercial Airplane Market

Section 5

This section documents The Boeing Company's record of historical airplane deliveries and its forecast for the future market. Units and dollar values are included plus an outline of the methodology and assumptions used.

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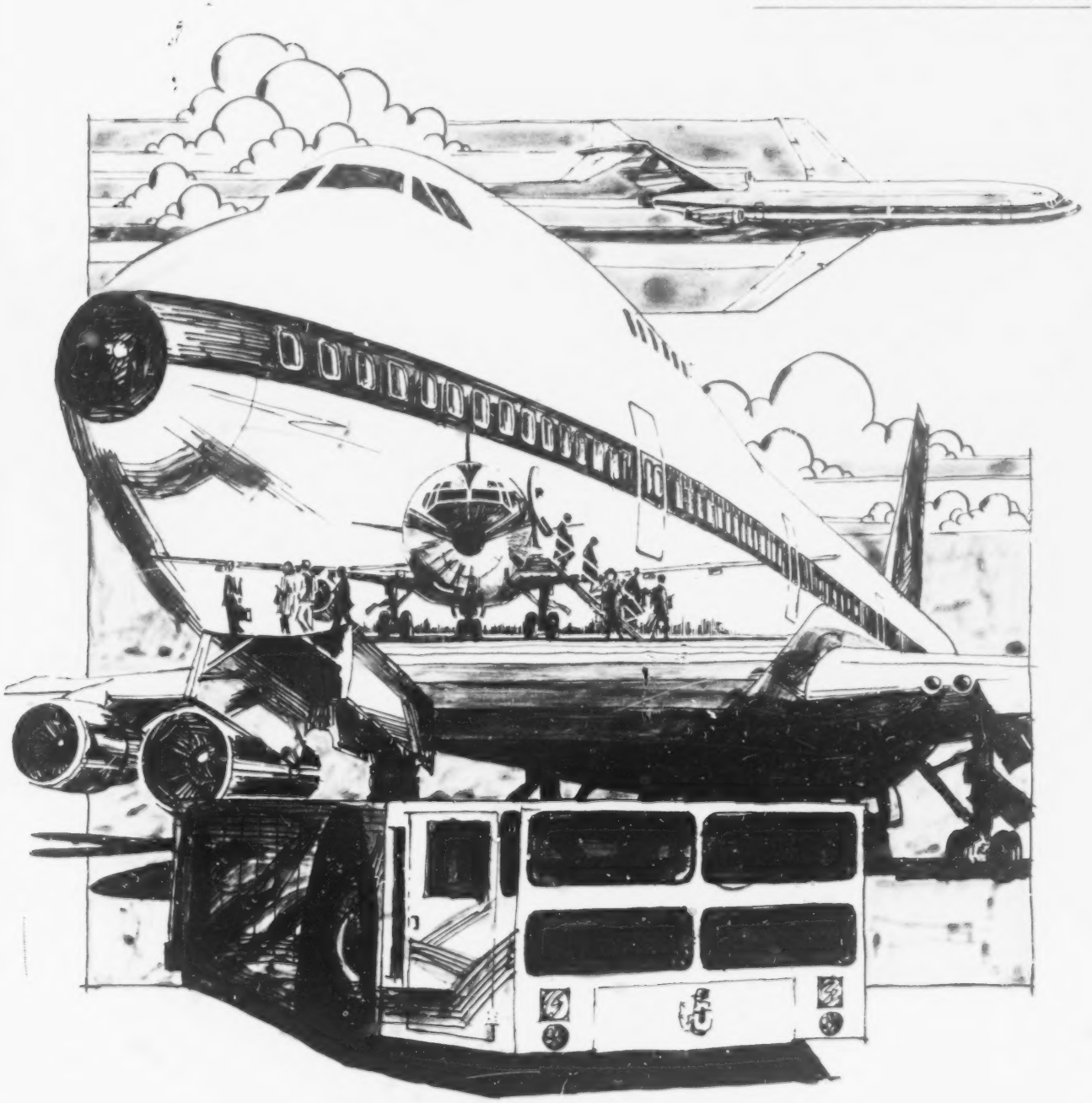


Commercial Airplane Market

Historical Jet Airplane Announced Orders

	1955	'56	'57	'58	'59	'60	'61	'62	'63	'64	'65	'66	'67	'68
707	70	53	14	6	7	14	45	17	37	59	128	96	87	40
720			11	25	10	45	31	2	6	12	7	5		
727-100						80	37	10	20	83	159	89	51	18
727-200											34	54	69	53
737											84	35	61	45
747												85	43	22
757														
767														
DC-8	73	39	10	10	18	4	20	25	20	34	70	112	57	36
DC-9									23	33	209	156	67	90
DC-10-10/15														47
DC-10-30/40														16
L-1011-1/100/200														73
L-1011-500														
880		30			1	12	9		10	3				
990			8	20	2			1	5	1				
U.S. MFRS SUBTOTAL	143	122	43	61	38	155	142	55	121	225	691	632	435	440
COMET	19*	6	9	15	9	13	8	9	3		1		1	
CARAVELLE	12		8	30	10	47	24	26	12	22	20	24	17	3
TRIDENT					24				3		24		2	27
VC-10				12		10	4		11		7	7	1	1
BAC-1-11							16	6	25	22	14	13	36	36
F-28											1		6	2
MERCURE														
A300														
A310														
VFW-614														
CONCORDE														
NON-U.S. MFRS SUBTOTAL	31*	6	17	57	43	70	52	41	54	44	67	44	63	69
TOTAL	174*	128	60	118	81	225	194	96	175	269	758	676	498	509

*Plus 19 more Comets ordered 1947-1954

World Jet Airplane Announced Orders

U.S. and Non-U.S. Customers

	1955-59	'60	'61	'62	'63	'64	'65	'66	'67	'68
U.S. CUSTOMERS										
UNITS	279	147	98	40	103	169	521	442	296	298
CURRENT $ (MILLIONS)	1,383	605	478	208	471	830	2,552	3,471	2,227	3,546
NON-U.S. CUSTOMERS										
UNITS	301*	78	96	56	72	100	237	234	202	211
CURRENT $ (MILLIONS)	1,212*	314	402	230	346	498	1,136	1,596	1,395	1,686
TOTAL										
UNITS	580*	225	194	96	175	269	758	676	498	509
CURRENT $ (MILLIONS)	2,595*	919	880	438	817	1,328	3,688	5,067	3,622	5,232

*Includes 19 Comets ordered prior to 1955 at value of $45.6 million.

'69	'70	'71	'72	'73	'74	'75	'76	'77	'78	'79	TOTAL
12	13	9	18	12	16	9	4	14	6	1	787
											154
8	14		2								571
56	34	26	117	92	88	50	113	133	131	110	1,160
31	20	49	13	43	47	35	39	37	146	76	761
30	18	7	18	29	29	20	14	42	79	79	515
									40		40
									84	51	135
16	8	4									556
44	34	24	28	73	41	21	35	45	70	49	1,042
9	8	12	20	5			4	8	11	11	135
20	13	6	26	26	13	9	12	26	34	26	227
	23	6	15	11	18	2	8	5	9	18	188
							6		17	19	42
											65
											37
226	185	143	257	291	252	146	235	310	627	440	6,415
											112
10	9	5									279
2		6	14	15							117
1											54
17	14	6	5		5	5	2		5		227
9	6	17	14	6	20	23	12	12	13	10	151
			10								10
		6	3		1	17	7	23	65	71	193
										61	61
					2	2	6				10
			9							1	10
39	29	40	55	21	28	47	27	35	83	143	1,224
265	214	183	312	312	280	193	262	345	710	583	7,639

'69	'70	'71	'72	'73	'74	'75	'76	'77	'78	'79	TOTAL
105	54	64	128	72	89	34	126	151	344	153	3,713
1,085	795	707	1,415	1,008	898	366	1,602	2,321	9,490	3,263	38,721
160	160	119	184	240	191	159	136	194	366	430	3,926
1,370	1,521	941	2,576	2,734	2,674	2,316	2,178	4,668	8,729	15,190	53,712
265	214	183	312	312	280	193	262	345	710	583	7,639
2,455	2,316	1,648	3,991	3,742	3,572	2,682	3,780	6,989	18,219	18,453	92,433

Commercial Airplane Market

Historical Jet Airplane Deliveries—by Model

	1958	'59	'60	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70	'71
707	8	77	67	12	38	28	32	52	77	113	111	59	19	10
720			24	68	30	6	6	9	6	5				
727-100						6	95	111	135	148	46	9	10	9
727-200										7	114	106	44	24
737										4	105	114	37	29
747												4	92	69
DC-8		21	91	42	22	19	20	31	32	41	102	85	33	13
DC-9								5	69	152	203	121	54	44
DC-10-10														13
DC-10-30/40														
L-1011-1/100/200														
L-1011-500														
880			14	33	9	6	1	2						
990					24	10	3							
U.S. MFRS SUBTOTAL	8	98	196	155	123	75	157	210	319	470	681	498	289	211
COMET	7*	19	20	14	13	2	2	1		1				
CARAVELLE		18	39	39	34	22	24	18	18	21	14	13	7	4
TRIDENT						1	10	9	12	2	11	9	2	13
VC-10							14	11	7	10	9	2	1	
BAC-111								34	45	21	26	39	22	13
F-28												9	11	10
MERCURE														
A300														
VFW-614														
CONCORDE														
NON-U.S. MFRS SUBTOTAL	7*	37	59	53	47	25	50	73	82	55	60	72	43	40
TOTAL	15*	135	255	208	170	100	207	283	401	525	741	570	332	251

*Plus 33 Comets delivered 1952-1957.

World Commercial Jet Airplane Deliveries

U.S. and Non-U.S. Customers

	1958	'59	'60	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70	'71
U.S. AIRLINES														
UNITS	8	87	115	123	82	46	125	172	283	341	467	347	132	70
CURRENT $ (MILLIONS)	36	406	599	564	419	266	596	830	1,273	1,741	2,675	2,225	1,762	975
NON-U.S. AIRLINES														
UNITS	7*	48	140	85	88	54	82	111	118	184	274	223	200	181
CURRENT $ (MILLIONS)	17*	128	616	345	361	234	377	547	595	859	1,531	1,240	1,442	1,656
TOTAL														
UNITS	15*	135	255	208	170	100	207	283	401	525	741	570	332	251
CURRENT $ (MILLIONS)	53*	534	1,215	909	780	500	973	1,377	1,868	2,600	4,206	3,465	3,204	2,631

*Plus 33 Comets delivered 1952-1957 at a value of $79 million.

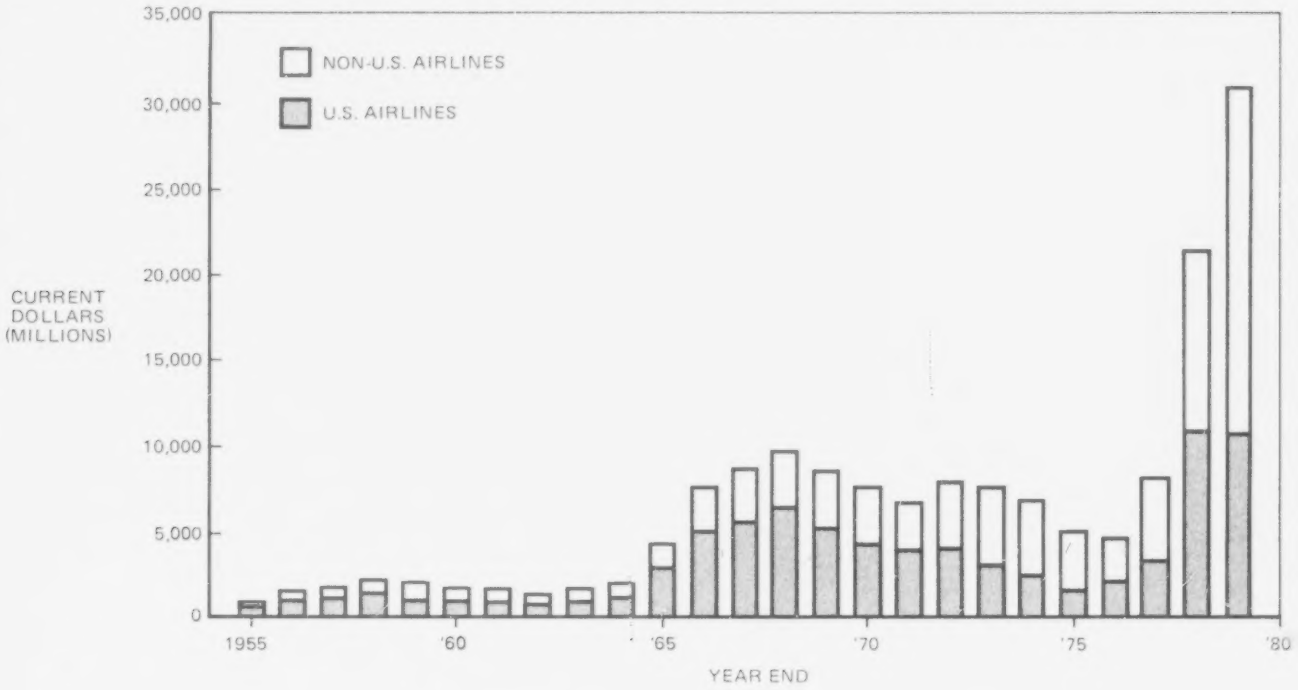
'72	'73	'74	'75	'76	'77	'78	'79	TOTAL
4	11	21	7	9	8	13	6	782
								154
2								571
39	92	91	91	61	67	118	136	990
22	23	55	51	41	25	40	77	623
30	30	22	21	27	20	32	67	414
4								556
32	29	48	42	50	22	22	39	932
48	13	13	14	1	1	5	9	117
4	44	34	29	18	13	13	27	182
17	39	41	25	16	11	8	8	165
							6	6
								65
								37
202	281	325	280	223	167	251	375	5,594
								112
5	3							279
11	8	3	6	9	7	4		117
								54
7	2	4	2		6	3		224
13	19	9	20	17	13	11	12	144
		6	4					10
		4	9	13	16	15	24	81
			1	4	5			10
			1	6	2		1	10
36	32	26	43	49	49	33	37	1,041
238	313	351	323	272	216	284	412	6,635

'72	'73	'74	'75	'76	'77	'78	'79	TOTAL
94	152	105	99	67	88	142	189	3,334
1,418	2,033	1,491	1,329	958	1,176	2,065	3,368	28,205
144	161	246	224	205	128	142	223	3,301
1,421	1,975	2,862	3,091	3,206	2,393	3,009	5,805	33,789
238	313	351	323	272	216	284	412	6,635
2,839	4,008	4,353	4,420	4,164	3,569	5,074	9,173	61,994

Commercial Airplane Market

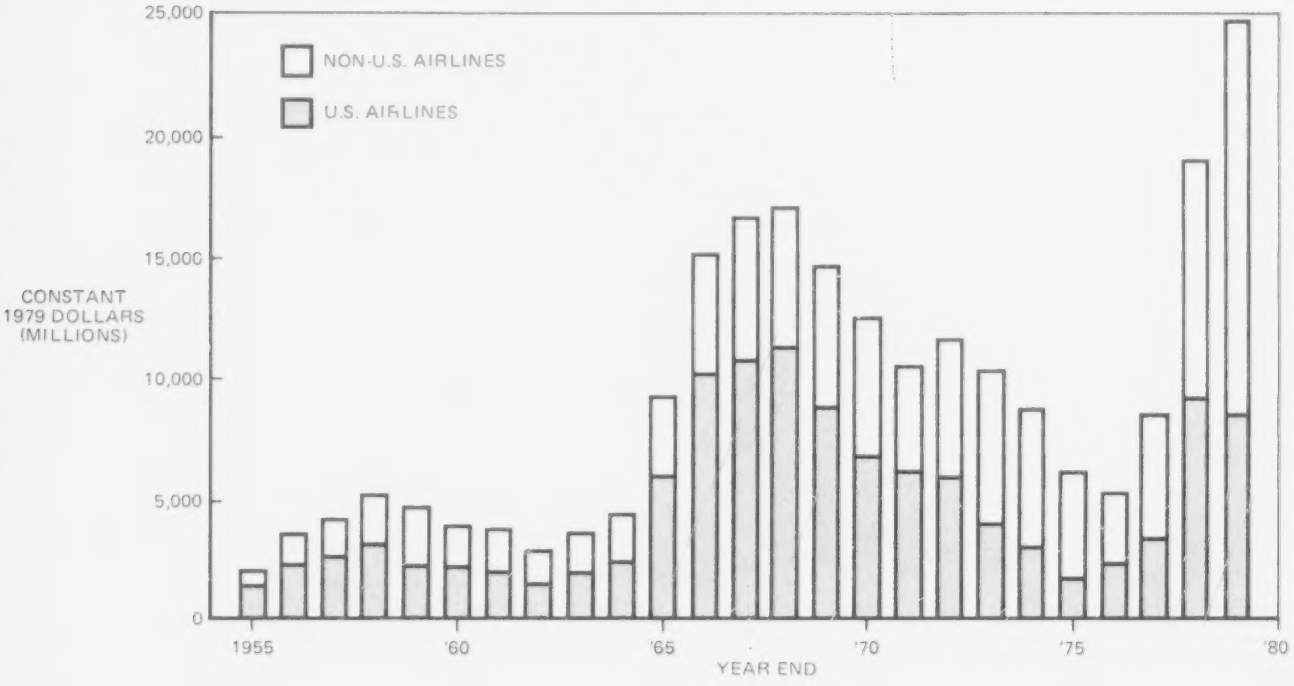
World Jet Airplane Backlcg History

Current Dollars



World Jet Airplane Backlog History

Constant Dollars



Commercial Airplane Market

Year-End 1979 World Airline Jet Airplane Inventory

By Regional and Range Distribution

	SHORT RANGE									MEDIUM RANGE									
	737	DC-9	BAC	CVL	F28	MRC	TRD	VFW	SUB-TOTAL	720	727-100	727-200	DC-10-10	L-1011*	880	990	A300	COMET	SUB-TOTAL
U.S. AIRLINES	207	391	30	6					634	15	374	662	105	87	8		12		1,263
CANADA	46	46	3						95		5	24		10					39
LATIN AMERICA & CARIBBEAN	53	48	22	12	11				146	15	74	44		2	2				137
EUROPE	116	289	93	103	37	10	56	3	707	28	35	129	8	15		12	36	6	269
AFRICA	56	2	1	4	18				81	10	10	37					6		63
MIDDLE EAST	36		2	4			3		45	21	7	18		19					65
ASIA & PACIFIC	67	71	13	2	40		39		232	7	19	58		30	2		26		142
TOTAL WORLD	581	847	164	131	106	10	98	3	1,940	96	524	972	113	163	12	12	80	6	1,978

Notes:
Excludes non-airline operators.
Excludes equipment built in the U.S.S.R.
Includes small number of airplanes which were not in service at year-end 1979.
*Includes 131 L-1011-1, 17 L-1011-100, and 15 L-1011-200.

By Year of First Delivery

	1958	'59	'60	'61	'62	'63	'64	'65	'66	'67	'68	'69	'70	'71	'72	'73	'74	'75
707	1	25	21	6	28	19	24	49	68	106	96	56	12	8	3	10	13	2
720			12	49	15	5	5	8	2									
727-100						6	89	104	121	139	40	8	8	7	2			
727-200										7	111	104	42	22	39	92	89	87
737										4	103	111	36	27	21	17	39	50
747												2	83	66	29	27	21	20
DC-8		11	43	21	16	15	16	25	30	38	95	78	31	11	3			
DC-9								4	63	142	185	108	52	41	24	20	46	34
DC-10-10														13	45	12	13	14
DC-10-30/40															4	41	33	29
L-1011-1/100/200															16	38	41	25
L-1011-500																		
880			4	4	2	1	1											
990					9	3												
U.S. MFRS SUBTOTAL	1	36	80	80	70	49	135	190	284	436	630	467	264	195	186	257	295	261
COMET					6													
CARAVELLE		5	14	11	12	10	12	6	10	15	9	10	5	4	5	3		
TRIDENT							4	5	8	1	11	8	1	13	10	8	3	6
VC-10							2	8	1	2	3	1						
BAC-111								26	19	16	20	35	17	12	6	2	3	
F-28												7	7	6	9	13	8	15
MERCURE																	6	4
A300																	4	9
VFW-614																		
CONCORDE																		1
NON-U.S. MFRS SUBTOTAL		5	14	11	18	10	18	45	38	34	43	61	30	35	30	26	24	35
TOTAL	1	41	94	91	88	59	153	235	322	470	673	528	294	230	216	283	319	296

Notes:
Excludes non-airline operators.
Excludes equipment built in the U.S.S.R.
Includes small number of airplanes which were not in service at year-end 1979.

LONG RANGE								
707	747	DC-8	DC-10-30/ 40	L-1011- 500	CONCORDE	VC-10	SUB- TOTAL	TOTAL
206	134	190	35	2			567	2,464
1	15	40	3				59	193
57	6	30	14				107	390
118	99	88	73	4	10	15	407	1,383
40	14	14	7			2	77	221
55	27	9					91	201
73	94	62	46				275	649
550	389	433	178	6	10	17	1,583	5,501

'76	'77	'78	'79	TOTAL
1	1	1		550
				96
				524
60	67	117	135	972
35	24	38	76	581
27	19	29	66	389
				433
45	22	22	39	847
1	1	5	9	113
18	13	13	27	178
16	11	8	8	163
			6	6
				12
				12
203	158	233	366	4,876
				6
				131
9	7	4		98
				17
	6	2		164
13	11	8	9	106
				10
13	15	15	24	80
1	2			3
6	2		1	10
42	43	29	34	625
245	201	262	400	5,501

Commercial Airplane Market

Forecast Methodology

Long-Term Market Forecast

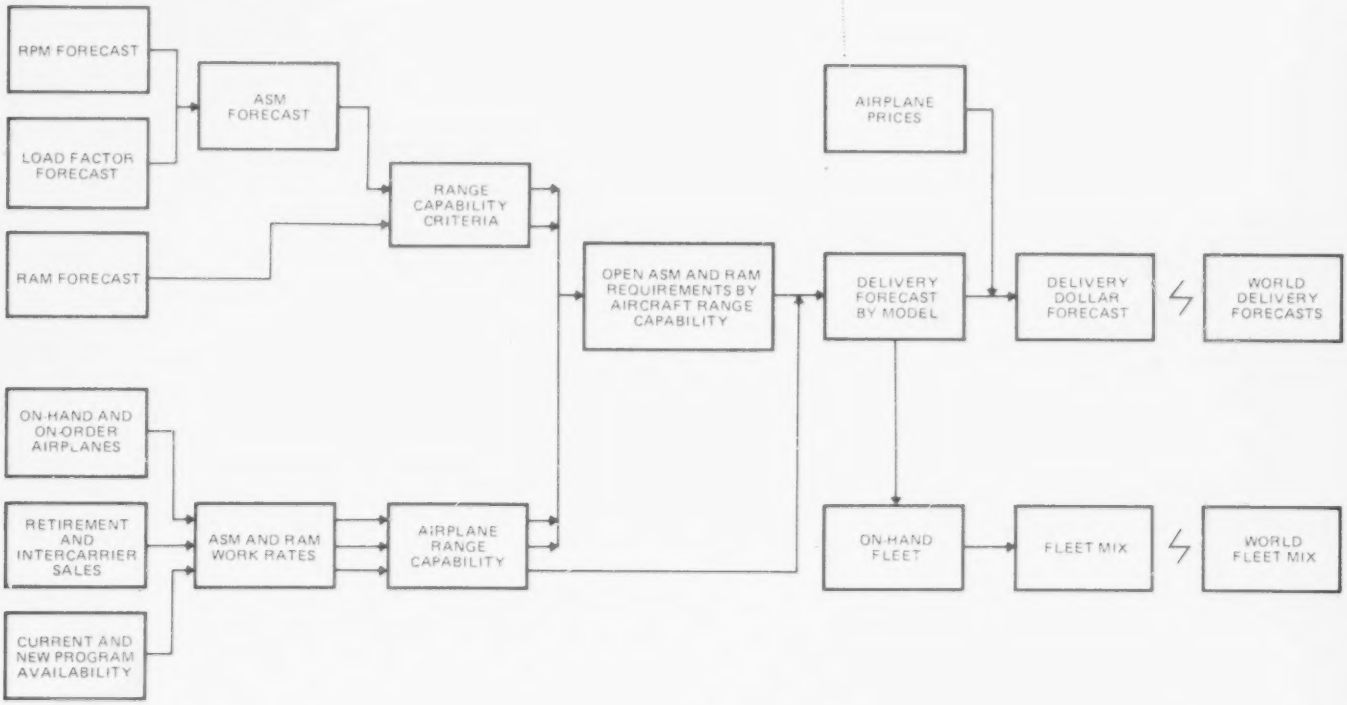
Macro forecasts are made of major world economies and major passenger and cargo traffic generation areas.

This world traffic is distributed to 60 major airlines and 21 groups of airlines.

Product forecasts are created analytically utilizing an interactive computer program and considering traffic growth, retirements, load factor, work rates, range requirements, and available airplanes.

Airplane Forecast Methodology

Year by Year by Airline



Forecast Model

$$\text{Revenue Passenger-miles} = \underbrace{\text{Load factor} \times \text{Average Seating capacity}}_{\text{Economic factors}} \times \underbrace{\text{Revenue Airplane-miles}}_{\text{Service factors (frequencies \& nonstops)}}$$

Forecast Assumptions

FACTOR	ANNUAL GROWTH (PERCENT)	1978 VALUE	1989 VALUE
REVENUE PASSENGER-MILES	6.6	567 BILLION	1,144 BILLION
OVERALL LOAD FACTOR	0.5	62.0%	65.6%
SCHEDULED LOAD FACTOR	0.5	59.5%	63.2%
AVAILABLE SEAT-MILES	6.1	913 BILLION	1,745 BILLION
AVERAGE SEATING CAPACITY	3.0	160 SEATS	221 SEATS
REVENUE AIRPLANE-MILES (TOTAL)	3.0	5,700 MILLION	7,910 MILLION
AIRPLANE-MILES/AIRPLANE (AVERAGE)	1.0	1,085 MILLION	1,209 MILLION

Equipment retirement assumed after an average age of 16-18 years.

Nine-abreast seating in wide-body trijet, 10-abreast in 747 (coach section) by 1980.

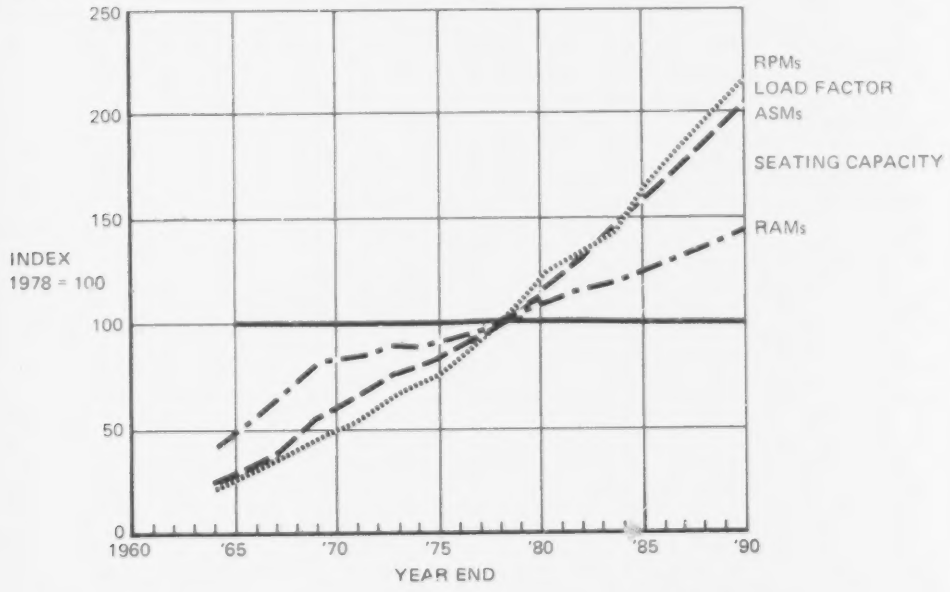
Growth Relationships

Annual RPM growth = Load factor growth x ASM growth
1.066 1.005 1.061

Annual RPM growth = Load factor growth x Average seating capacity x RAMs
1.066 1.005 1.030 1.030

Notes:
RPM: Revenue passenger-mile
ASM: Available seat-mile
RAM: Revenue airplane-mile

Growth Factors for World Airlines

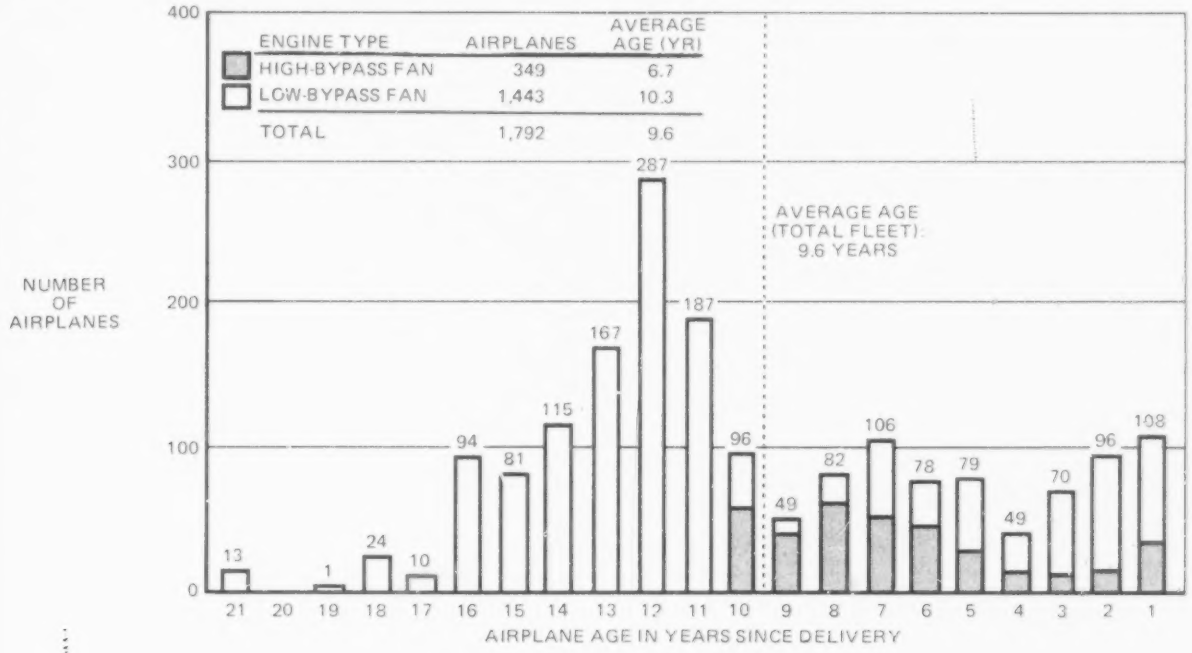


Commercial Airplane Market

Jet Fleet Age Distribution

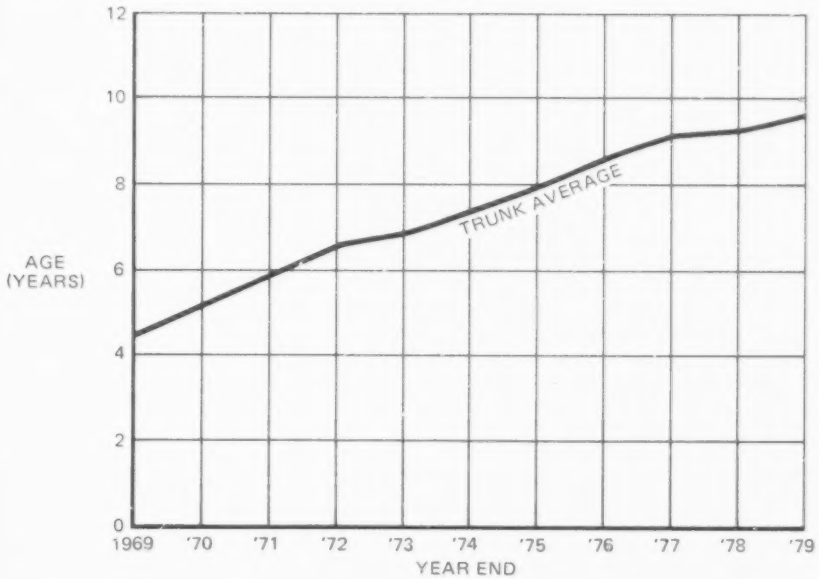
U.S. Trunks

Jet Airplanes in Service December 31, 1979



Average Age of Jet Operating Fleet

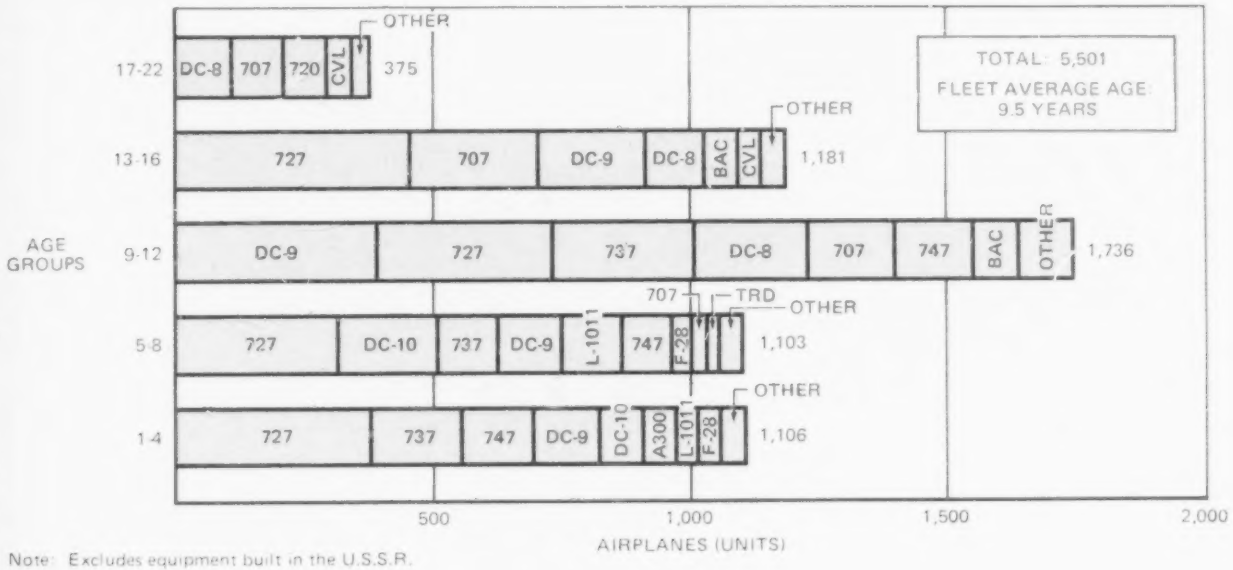
U.S. Trunks



Jet Fleet Age Distribution

World Airlines: By Model

Jet Airplane Inventory December 31, 1979

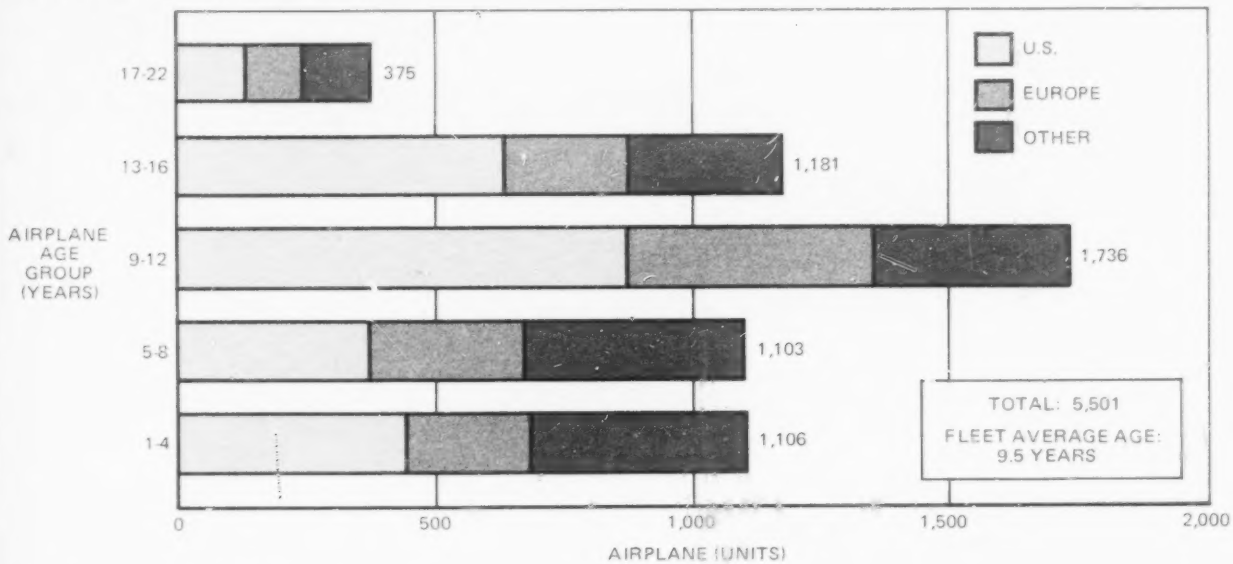


Note: Excludes equipment built in the U.S.S.R.

Jet Fleet Age Distribution

World Airlines: By Region

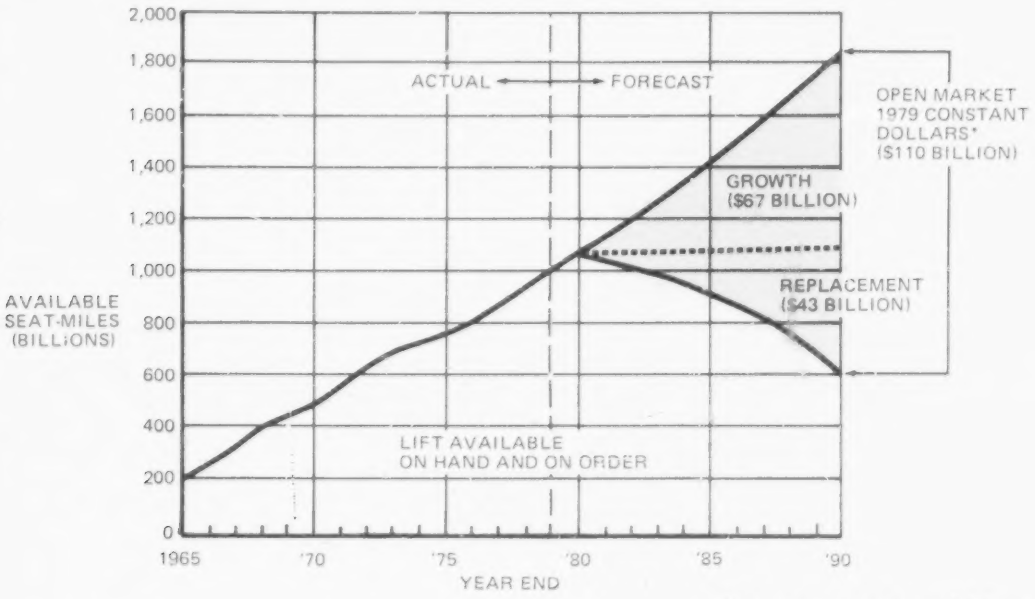
Jet Airplane Inventory December 31, 1979



Note: Does not include U.S.S.R.-built jets

Commercial Airplane Market

World Open-Lift Requirements

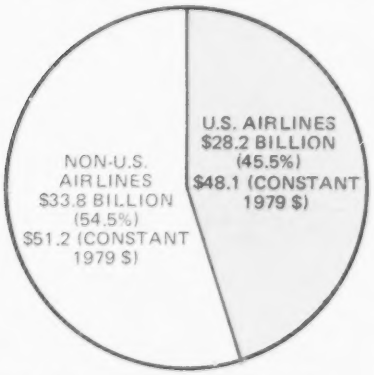


Note: Does not include U.S.S.R.-built jets.

*Includes $4 billion freighter market.
Passenger market through 1990 is $106 billion in 1979 dollars.

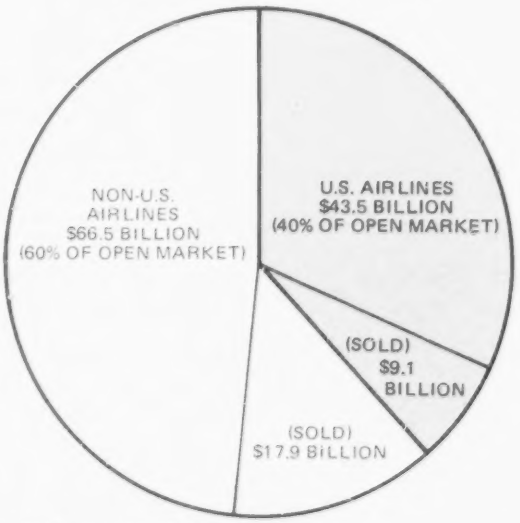
World Commercial Jet Transport Market

Delivered 1952 Through 1979



TOTAL: $62.0 BILLION (CURRENT $)
$99.3 BILLION (CONSTANT 1979 $)

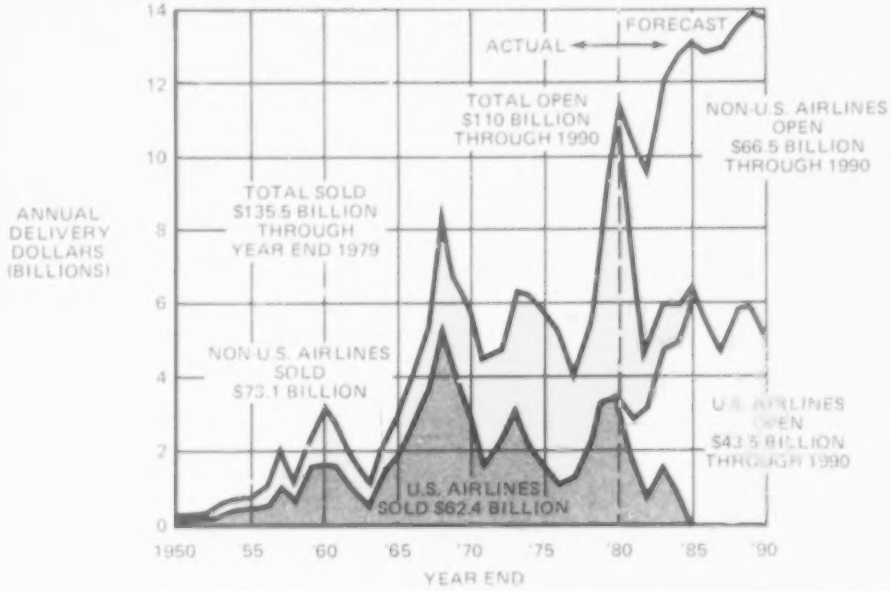
To Be Delivered Through 1990



OPEN: $110 BILLION (CONSTANT 1979 $)
SOLD: $27 BILLION (CONSTANT 1979 $) AS OF YEAR-END 1979

World Annual Commercial Transport Deliveries

(Constant 1979 Dollars)

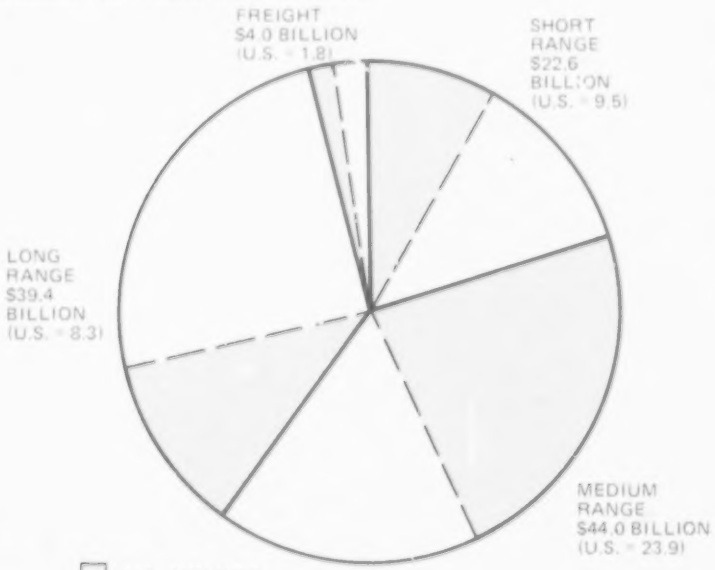


Note: Does not include U.S.S.R.-built jets. Includes props and turboprops (1950-1965).

World Commercial Jet Transport Market

Open Market Through 1990

$110 Billion Total (Constant 1979 Dollars)



Geographical Distribution

Note: Does not include U.S.S.R.-built jets

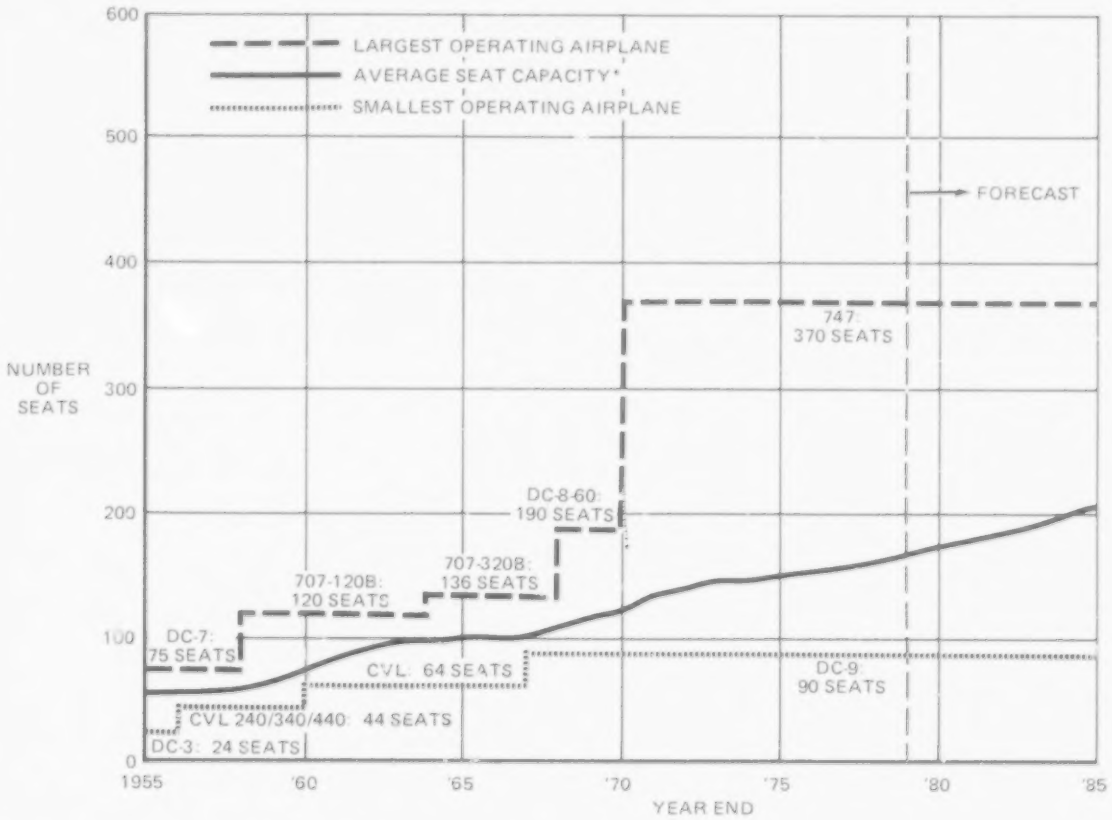
Commercial Airplane Market

World Commercial Airplane Deliveries

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	TOTAL
STANDARD BODY	310	282	229	240	249	233	232	228	177	154	144	2,478
WIDE BODY	186	172	181	246	253	257	224	222	250	265	265	2,521
TOTAL	496	454	410	486	502	490	456	450	427	419	409	4,999

Average Seat Capacity Comparisons

U.S. Trunks



*Average seat capacity = available seat-miles/revenue airplane-miles

Total Market Forecast 1980 Through 1990

SIZE (U.S. MIXED CLASS)	SHORT TO MEDIUM RANGE*	LONG RANGE**	TOTAL
AIRPLANE UNITS			
LARGE–OVER 250 SEATS	215 (4%)	918 (19%)	1,133 (23%)
MEDIUM–160-250 SEATS	1,698 (34%)	200 (4%)	1,898 (38%)
SMALL–UNDER 160 SEATS	1,963 (39%)	5 (NIL)	1,968 (39%)
TOTAL	3,876 (77%)	1,123 (23%)	4,999 (100%)
DOLLARS (BILLIONS)			
LARGE–OVER 250 SEATS	8.3 (6%)	45.7 (34%)	54.0 (40%)
MEDIUM–160-250 SEATS	46.6 (34%)	7.3 (5%)	53.9 (39%)
SMALL–UNDER 160 SEATS	28.8 (21%)	0.3 (NIL)	29.1 (21%)
TOTAL	83.7 (61%)	53.3 (39%)	137.0 (100%)

* Up to 2,700 statute miles
**Greater than 2,700 statute miles